DECEMBER 2025 VOLUME 22 ISSUE 12

THE LOGGER'S BARK

a magazine

Radio Club of Tacoma

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About The Cover

Hard to believe this is my 24th issue and the last as your *Logger's Bark* editor. I wanted to have thumbnails of all those covers on the last cover just to make for a nice illustration of the span of all that time. Thanks for coming along and being a loyal reader. 73—*Dave W7UUU*

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W7DK 2025 Officers and Committee Leaders

Executive Committee:

President:	Adam Barbera W2NCC
Vice President:	Mike Isakson W7XH
Secretary Pro Tem:	Mike Drorbaugh W7MKE
Treasurer:	(Acting) Doug Schafer AB7DG

Board of Directors:

Board:	Mike Drorbaugh W7MKE
Board:	Paul Matney W7PFU
Board:	Doug Schafer AB7DG
Board:	Dan Vacanti KD7SV
Board:	Dave Ashley W7GEL

Key Committee Chairpersons:

Membership:	Mike W7XH
Salmon Run:	Mike W7XH
Infotech/IT:	Randy WB4SPB
HF Operations:	Phil K7PIA
Facilities:	Adam W2NCC
Property Mgmt.	Red WB7EC
Museum:	Dan KD7SV
Planning:	Mike W7XH
POTA:	BJ KO7T
General Meeting:	Dave W7UUU
Bark layout & Editor:	Dave W7UUU
Assistant/Copy Editor:	Anne N7ANN

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But don't stop there! Each issue is 100 or more pages of fun and cool stuff to explore! Scroll on!

xx=nothing submitted

PRESIDENT'S CORNER

Monthly ruminations from our President

Adam
Barbera
W2NCC

THE RADIO CLUB OF TACOMA: CHARTING OUR FUTURE TOGETHER

A strong organization needs a long-term vision — a steady roadmap to guide growth and keep it on course. For the Radio Club of Tacoma that means a multi-year strategic plan that provides direction, stability, and motivation. Such a plan gives us shared purpose; it helps us decide what to do next, and why. It sparks ideas, encourages collaboration, and invites members to contribute their perspectives. Plans are not written in stone. They evolve as we learn more and as our members' needs shift. What matters most is that we agree on the destination: protecting the club, sustaining our mission, and ensuring the Radio Club of Tacoma thrives into its second century.

Photo: W7DK Archives—Colorized for realism

Winnie Dow 7FG (7CB after WWI) - above at age 14 in her spark shack in 1916; She was the first female amateur radio operator in the 7th District (WA, OR, ID, & MT then) and an early member of the Radio Club of Tacoma as member #40.

Our history shows why long-term thinking matters. From the earliest days our club has been a place where new ideas and innovation come together. More than a hundred years ago our founders were among the first amateur radio operators in the country to organize themselves into a formal group. They saw the potential of wireless communication and moved quickly to create structure and opportunity for experimentation and learning. In the late 1930s they did something few groups could claim — they bought a house for club operations. That was an act of purpose and commitment, and it set a tone that was carried forward through the decades. In the 1950s that same spirit of action and investment led the club to the larger, more feature-rich clubhouse we enjoy today.

Those early members also demonstrated an openness that was uncommon at the time. Few radio clubs of the 1930s could boast both ownership of property for training and experimentation, as well as a willingness to welcome female operators. The Radio Club of Tacoma counted the first female amateur radio operator in the 7th Call District – Ms. Winnifred Dow, 7FG, among its members — a pioneering moment that speaks to the club's inclusive instincts. That combination of curiosity, practical action, and inclusiveness is the same energy we need to draw on now. It is a heritage that calls us to both preserve valuable traditions and to embrace new directions.

Big changes don't happen all at once. They are the result of steady, planned work. Over the last few years, we've taken important steps to prepare the club for sustained growth. Financially, we have diversified our income streams, creating new funding drivers that make the club more resilient. This financial stability is not an end in it-

PRESIDENT'S CORNER

Monthly ruminations from our President

Adam
Barbera
W2NCC

self; it is a tool that allows us to support programs, invest in facilities, and underwrite experiments that build value for members and the broader amateur radio community. Sound fiscal practices give us the confidence to try new things while protecting the club's long-term health.

Our meeting and event infrastructure is improving as well. The new general meeting location can seat more than a hundred people, offers food service, and is reasonably priced — a combination that makes gatherings more welcoming and accessible. There is plenty of room for members to meet in person and for informal, one-on-one conversations that often spark the best ideas. That face-to-face time remains central to who we are; it's where mentoring happens, where technical learning and insight is passed along, and where friendships deepen.

A comfortable venue supports that culture of hands-on learning and fellowship.

President Adam W2NCC greets a large audience at a "Get to know the Radio Club of Tacoma" event

Membership growth over the past year has truly been encouraging. We've gone from roughly 300 members to over 440 in one year, a gain that reflects both renewed interest in ham radio and the effectiveness of our outreach and program offerings. That increase didn't happen by accident. It was a product of focused effort, new programming, and active member engagement. Offering practical, entry-level learning opportunities — beginner soldering classes, antenna and balun building workshops, and similar hands-on sessions — brings people into the hobby and helps preserve the skills that make amateur radio lasting and meaningful. Those classes turn curiosity into competence, and new arrivals into active, contributing members.

Technology has also expanded how we define membership and participation. With platforms like Zoom and Teams, members can attend general meetings, workshops, and committee meetings from wherever they are. Remote participation has become especially important for those with mobility challenges or those who are no longer comfortable driving at night or covering long distances. The convenience of virtual access does not replace in-person meetings; rather, it complements it. Virtual options broaden our reach, support deeper and richer continuity of involvement, and allow members who would otherwise drift away to remain engaged. We should recognize remote participation as a valuable tool for inclusion rather than an afterthought.

Public visibility remains a high priority. At SEA-PAC this year the club managed the Country Store and provided equipment for a testing station, opportunities that put our skills and service on display for a regional audience. Carrying out those roles gave hams who visited a clear view of who we are and what we do, and it reinforced our reputation as an active, capable organization. Likewise, our presence at the Mike and Key hamfest with an information booth offered face-to-face conversations that helped introduce the club to new hams and reminded seasoned operators of the resources we offer. These events are more than marketing; they are community-building. They let us show our strengths, recruit volunteers, and create partnerships that strengthen the regional ham ecosystem.

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email loggersbark@gmail.com

PRESIDENT'S CORNER

Monthly ruminations from our President

Adam Barbera W2NCC

All these developments spring from the dedication of members who volunteer their time, talent, and leadership. Members who teach classes, repair equipment, manage events, or simply show up for the work of the club are the reason we advance. Their contributions create momentum. The multi-year plan we are crafting is intended to capture that momentum, make our priorities explicit, and guide resource allocation. It will help us focus on the activities that generate the greatest benefit for members and the community, while still leaving room for experimentation and member-driven initiatives.

A strategic plan will also make us better stewards of our history. Preserving the club's legacy does not mean freezing it in amber. It means honoring the ingenuity and inclusiveness of earlier generations by building systems that allow future members to innovate and to lead. That means maintaining facilities that support training and experimentation, expanding programs that teach technical skills, and sustaining outreach that keeps the hobby visible to a new generation. It also means thoughtful governance and transparent decision-making so members can see how choices are made and why particular directions are chosen.

As we work through our multi-year strategy, we should remain candid about the challenges that lie ahead. Growth brings the need for stronger administrative systems, for an uptick in volunteers who can take on operational roles, and for communication methods that scale. We'll need to balance investments in physical assets with investments in people and programs. We will also need to continue cultivating relationships with partner organizations and events, so the club remains integral to the broader ham community. These are practical, solvable tasks, and the plan will help us sequence them wisely.

The Radio Club of Tacoma's story is one of steady progress and imagination — a story written by people who cared enough to act, to teach, and to welcome others into a technical community. That legacy remains our north star. With a thoughtful multi-year plan, with faithful stewardship of resources, and with the energy, volunteerism, and creativity of our membership, there is every reason to be optimistic about the future. We are not setting out to change what makes us strong; we are setting out to preserve it, extend it, and hand it forward. If we proceed deliberately, with shared purpose and a spirit of inclusion, the Radio Club of Tacoma will continue to be a place where new ideas meet action for decades to come. The future is in our own hands.

-Adam C. Barbera W2NCC
President, Radio Club of Tacoma

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FROM THE DESK OF THE VP

Insights from our Vice President

Mike Isakson
W7XH

LAST MONTH I SHARED SOME THOUGHTS AND DATA ABOUT our changing population. As illustrated in the graph below, 68 percent of the population is under the age of 45. I would like to share the makeup of our club to show how our own demographics suggest a need to rethink how we market both our club and amateur radio.

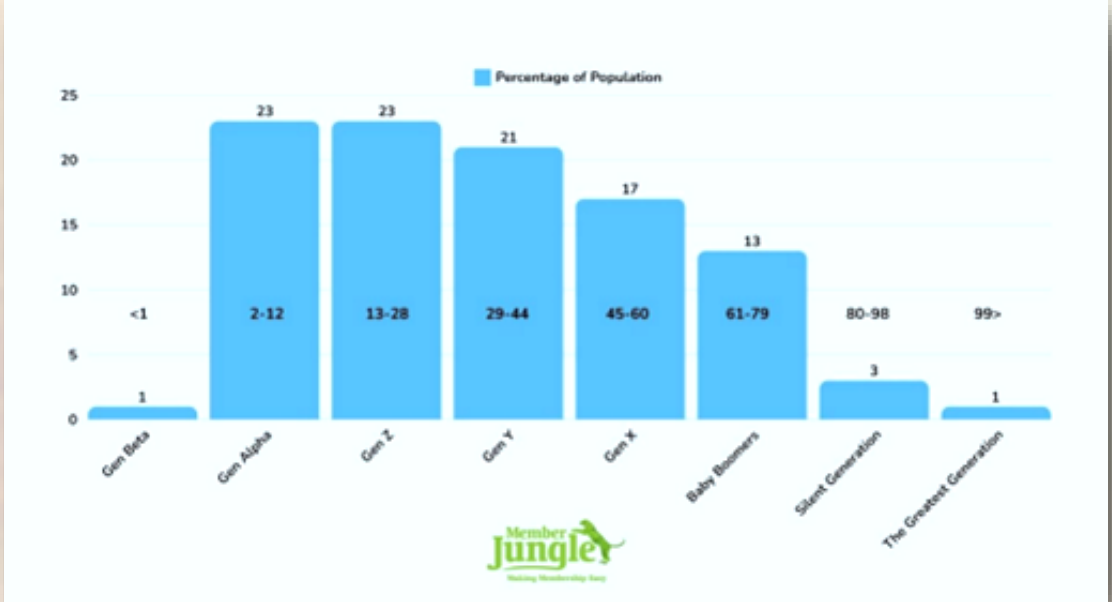
Our club has about 445 members. Sixty-one of them, or about 14 percent, are under the age of 45. Those representing Gen X number eighty-three, or about 19 percent. Over 286 of our members, roughly 67 percent, are over the age of sixty-one. Like many amateur radio clubs, we too often find ourselves reporting Silent Keys to our membership.

Over the last year and a half, however, we have added more than a hundred members. We have also seen increased member retention. While that growth spans all age groups, the majority has been in the over-sixty category.

It is probably a good idea to share what I believe has contributed to our growth.

- Our members have become more engaging when visitors come to our clubhouse or call for information.
- Monthly POTA outings.
- Weekly opportunities to learn and operate all of the gear in our HF room.
- Our special event station Bigfoot, with members operating across the country.
- Outreach to area hams, as well as newly licensed hams, through emails and postcards.
- Monthly trainings that might include WSJT-X essentials, kit builds, soldering classes, and antenna building.
- Creating consistency.
- Our newsletter, The Loggers Bark.

Last weekend we had a visitor from a city thirty miles away. I asked if he was involved with a club in his town. He was not. He said he liked our vibe, our activities, and the opportunities for involvement. It was a great visit, and a few days later I received his membership application. Gladly, he was not in the over-sixty group!



To be effective in

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Insights from our Vice President

Mike Isakson
W7XH

reaching the younger segment of our population, it seems apparent to me that we need a different marketing strategy and/or an onboarding process.

In an article on Member Jungle dated 10 March 2025, Piper Jackson wrote, "If the members are younger, they have the potential to stay longer.

Younger members offer several advantages beyond just longevity:

- They tend to be more open to new ideas.
- They are generally better at adopting new technology.
- They can introduce fresh perspectives and more efficient methods of doing things.
- They are likely to be more adaptable to change.
- They make excellent candidates for future committee roles.
- They can help connect your club with even younger generations.

Again, none of this is exclusive to younger members; older members can still offer all of this. It is simply more likely that younger members will demonstrate these qualities. Either way, we need to attract members across all generations, but addressing the underrepresentation of Millennials and Gen Z is a very good place to start. If you reach out to these generations in the right way, there are likely plenty of members waiting."

As depicted here, the technology age has become deeply intertwined with our lives.

The Motorola brick with its ten-hour charge time and thirty-minute talk time evolved into the smartphone. Talk, text, internet, streaming, banking, and countless apps define the device of Gen Y, Gen Z, and Gen Alpha of today.

Motorola DynaTAC 8000X
from 1983

Galaxy Z-Fold 7
Current model

With the world at their fingertips, information is simply a tap away. They expect responsive websites that work well for mobile users, and apps that are sleek, intuitive, and fast. If your website is not responsive, has clunky forms, or looks outdated, they are gone in a few seconds. That is how quickly you can lose the opportunity to connect.

Number of internet and social media users worldwide, 2025:

"As of October 2025, 6.04 billion individuals worldwide were internet users, amounting to 73.2 percent of the global population. Of this total, 5.66 billion, or 68.7 percent of the world's population, were social

FROM THE DESK OF THE VP

Insights from our Vice President

Mike Isakson
W7XH

media users. As of 2024, global internet usage was higher among individuals between 15 and 24 years old across all regions, with young people in Europe representing the most significant usage penetration at 98 percent. In comparison, the worldwide average for the 15-to-24 age group was 79 percent."

Published by Ani Petrosyan, Oct 20, 2025.

I want to share the following chart from Member Jungle to illustrate the impact of the World Wide Web and social media today.

Percentage Of Generation Using Social Media

	Facebook	YouTube	Instagram	TikTok	LinkedIn	Twitter
Gen Z	55%	84%	66%	59%	11%	31%
Gen Y	76%	94%	55%	44%	19%	31%
Gen X	76%	70%	39%	30%	18%	19%
Baby Boomers	70%	67%	26%	16%	16%	14%

You may notice that Gen Alpha is not represented in the chart above. Also missing are platforms like Snapchat, Pinterest, Reddit, Discord, Slack, and Groups.io.

As shown in the chart, Facebook does not have a strong following among Gen Z, though it works well for other generations. Since Facebook and Instagram are linked, are you cross-posting your content, including videos? Does your club have a YouTube channel? Are you creating and posting short TikTok videos of field day, fox hunts, meetings, trainings, or POTA outings?

Does your website have an opt-in box to capture names, emails, and phone numbers? Do you use email campaigns or email-to-SMS to share information? Do you know of, or use, a club management system like HamClubOnline? Is your membership form fast and simple, or are you using membership software? Can members or applicants pay with PayPal, Venmo, Zelle, Apple Pay, Google Pay, or Stripe? Are they able to set up recurring billing?

I also serve as our membership chairman. These are questions we are wrestling with — and probably questions most clubs should be wrestling with.

With so many platforms and methods to help with onboarding Gen Z and Gen Alpha, it will also take truthful, concise reasons for involvement, solid peer reviews, and multiple engagement points providing customized and tailored text, email, and newsletter content.

I said in the last article, "How we are recruiting will tell you who we are recruiting." If your current recruiting efforts are bringing in members proportionally across all generations, congratulations. Keep up the good work, and drop me a note at membership@w7dk.org — I would love to hear from you. If, however, your club is rich in Old Blood, then these are the tools and platforms we will need to embrace and develop to bring in a younger membership.

73
Mike W7XH
Vice President
Membership Chair

SECRETARY'S REPORT

W7DK Secretary Pro Tem—Mike W7MKE

AS YOU READ THIS, 2025 IS QUICKLY WINDING DOWN — but not the Radio Club of Tacoma! Far from it. The end of the year always brings new energy and a sense of celebration, and this month we have two big events on the calendar: our Annual Awards and Christmas Banquet, and the accompanying holiday get-together that's always a highlight of the season. It's one of the few club events my lovely XYL can be persuaded to attend, as all things radio don't exactly spin her dial. But that's perfectly fine with me — she's always been wonderfully supportive of my time in the hobby, never complains about my RCT schedule, and even takes an interest in hearing a few of the stories that come out of our meetings. I know how fortunate I am in that regard, and I count myself a lucky guy indeed.

Our second major event of the month is Straight Key Night, held each New Year's Eve. It's a long-standing tradition that has become something of a club institution. During this special evening, our CW operators take over the antennas, filling the air with the sound of brass pounding out dits and dahs, while the rest of us enjoy pizza, desserts, and the cheerful company of friends. This year will carry a bittersweet note for me, as we remember our friend and long-time club trustee, Nick Winter-K7MO (SK). Along with his father, Nick played a major role in shaping the Radio Club of Tacoma's success from the 1970s through the 2020s. He was an endless source of knowledge, always willing to share advice or lend a hand, and it's still hard to imagine our club without him. We also remember other dear friends we've lost, including Jan Gilbertson K7HTU, Steve Blacksten AD7VL, and Ollie Bond AD7CC, who passed away in late December of 2024. Others have endured long and difficult recoveries, among them Dave Brooks N7HT, Bruce Hanson WE7P, and Bill Wright AD7QI — and we continue to wish them steady healing and good health ahead.

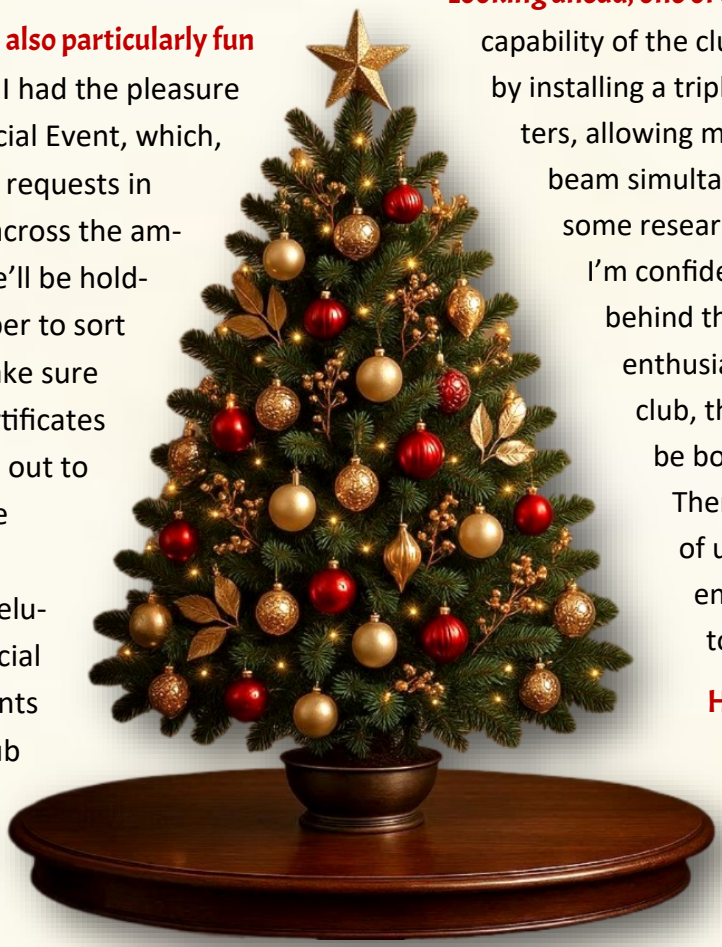
November is always a busy month for our officers and directors as we start building the foundation for the coming year. Elections, budgets, the club calendar,

SECRETARY'S REPORT

W7DK Secretary Pro Tem—Mike W7MKE

and our regular policy reviews all converge at once. I'm encouraged this time around by the number of members willing to step forward and serve. It's a healthy sign that people care about the direction of the club and want to contribute. That sense of shared purpose is what keeps our organization strong.

October and November were also particularly fun for me on a personal level. I had the pleasure of working the Bigfoot Special Event, which, judging by the flood of QSL requests in our mailbox, was a big hit across the amateur radio community. We'll be holding work parties in December to sort through everything and make sure everyone receives their certificates and rewards. My thanks go out to all who helped organize the event — and to those who joined in the chase for the elusive Big Stomp and the special Swamp Ape bonus. It's events like these that bring the club to life and keep us connected, both on the air and in spirit.



Also in November, my XYL and I made a trip to Pendleton, Oregon, for the Leather Life Convention — part of her own pursuit of knowledge and craftsmanship. While she attended her classes, I managed to sneak in two days of POTA activity under blue skies and crisp fall air. It was a perfect mix of radio and relaxation, and I even came home with another fine Pendleton shirt as a souvenir. The town itself is wonderful — friendly folks, good food, and a quiet charm that makes it easy to see why so many people love living there.

Looking ahead, one of our goals is to enhance the capability of the club's main antenna system by installing a triplexer and band-pass filters, allowing multiple stations to use the beam simultaneously. We've still got some research and planning to do, but I'm confident our members will rally behind the project. With renewed enthusiasm for contesting in the club, that improvement should be both practical and popular. There's plenty of work for all of us, but we've got the talent and the teamwork to get-'er-done.

Here's wishing all of you a joyful and peaceful Holiday Season. May it bring you time with family, good friends, and plenty of warm memories to carry into the new year.

Best wishes,
Michael Drorbaugh, W7MKE
Acting Secretary

I KNOW THAT I AM THE MEMBERSHIP GUY BUT I HAVE to ask, did y'all participate in the special event station "Bigfoot?" If you did, tell your friends to join the hunt in 2026! If you did not, we invite you to join us next year.

Dues! Guys, I really need you to get your dues in as soon as possible. I would like to celebrate the holiday with the family, and not the computer. I am looking for a way to streamline our current methods to make membership management easier and less time consuming. I hope to have a handle on that after the first of the year. It is also important because I will be creating a new membership directory for 2026. It has been a living document for the last two years, meaning that it is often updated weekly, but at worst it is updated monthly.

Salmon Run donations are still coming in, and we welcome your donation if you would still like to participate in our annual fundraiser.

Congratulations to our new club officers and board members. I hope to see all of you at the Christmas party and awards ceremony. We will be at the Eagles Club located at 7037 S Pine St, Tacoma, WA.

Save the date, December 13, 2025. Our awards ceremony may take a bit—we have had so many members wanting to participate in and lead activities. Thanks to all of you!

If you are thinking of joining, now is a great time. We have members in 18 states and 2 other countries. Many of our out-of-state members played a huge role in the Bigfoot event, giving us greater coverage on bands and modes. Ronnie NZ4X of Florida headed up our bonus station W4S, Skunk Ape. We think that everyone has a voice and can bring something to the table.

As always, membership forms are available to download and return via snail mail, or from the home page of W7DK.org on the left side menu you can find the online application with a PayPal option.

Happy Holidays to all!

73
-Mike W7XH
Membership Chair

WOW—here we are—the December 2025 issue of The *Logger's Bark*! This one marks the end of my two-year, twenty-four-issue commitment, and it feels like it's all gone by in a flash. Where did the time go? I can honestly say that despite the forty- to fifty-hour weeks this project turned into (truly a full-time job), I enjoyed almost every minute of it.

The club bylaws don't actually require a newsletter—only that the Board and General Meeting minutes be distributed monthly to the membership. But over the years, that simple requirement evolved into the newsletter we've long known as The *Logger's Bark*.

When I was asked to take on my 2-year stint as Editor, I had the notion to move it from a basic newsletter (and there's nothing wrong with basic newsletters!) to something closer to a full-fledged magazine. That's exactly what I set out to do, beginning with the January 2024 issue.

At that time, The Bark was an "end of the month" publication—more of a retrospective. I wanted it to feel like a magazine, with new content ready at the start of each month instead. So I spent most of November and December 2023 building the layouts and writing as many articles as I could, determined to have the January 2024 issue out by mid-month—two weeks early. That gave me enough material to shift February's issue to the first of the month, and from then on, every issue followed right on schedule. It was a challenge, but pulling it off was deeply satisfying for me.

Thinking back, I still remember the quiet whispers I overheard around the clubhouse and at meetings—predictions that the whole thing would fall apart by spring and revert to a simple newsletter again. One or two comments even hinted that some folks were *hoping it would.* There's always going to be a curmudgeon in the closet, so I wasn't terribly surprised.

As the months turned into quarters, and the seasons changed, I kept evolving the page layouts and artwork themes, always striving to perfect the look I wanted to see each month. There were certainly some struggles along the way—like in the late summer of 2024, when the Microsoft Publisher conversion tool to Adobe PDF format went through upheaval, as the two software companies jockeyed to shift how the programs worked. Month-end deadlines became stressful, with some issues taking ten or more hours just to get a completed issue converted for publication.

But in the end, it all worked out. By late fall 2024, whatever software ailment had plagued Microsoft and Adobe had been resolved, and high-resolution conversions were once again the straightforward task they had been before.

Things really went into overdrive in March 2024, when the CEO of QRZ.com asked me to publish The *Logger's Bark* on the front page of the largest ham radio website in the world. Almost overnight, the Radio Club of Tacoma went from being a

local membership to having truly global exposure. In that first month on QRZ, we saw over 15,000 *Bark* downloads from around the world.

Within weeks, emails started arriving from everywhere—all across the United States, as well as from Australia, Asia, and the European Union. Within just a few months, we began receiving membership applications from across the U.S., eventually gaining new members as far away as France and Japan.

It was incredible to see our club have visibility worldwide—to see our members' "Around the Clubhouse" smiling faces month after month being viewed by hams in all corners of the amateur radio world… and to have our articles and columns read by people for whom English was a second or even third language. Simply amazing.

The table at the right is a tally of the page count and word count of the past 24 issues (inclusive of this one). I hope some folks got enjoyment out of all this. I had a lot of fun creating it but now it's time to retire and "do some other stuff" in my life—get away from the full-time job of writing articles and back to playing radio, working in my woodshop, and spending time traveling with my lovely wife Anne N7ANN.

And speaking of Anne, a huge thanks to her for 10-plus hours every single month working with me to proofread every issue. Outside of myself, she's the only person on earth who read every single word on every single page, cover to cover, for 24 months—three quarter of a million words! I couldn't have done it without her amazing effort and eagle-eye at finding the smallest of mistakes.

Wishing all a Happy Holiday season, Merry Christmas, and a Happy New Year.

Signing off,

-Dave W7UUU

**Page counts in the table reflect the full W7DK version*

Month/Year		
2024	**Page Count***	**Word Count**
January	84	23,850
February	82	24,519
March	97	26,547
April	102	25,496
May	120	31,256
June	114	30,898
July	126	32,677
August	98	27,743
September	92	24,296
October	104	30,634
November	114	34,978
December	114	34,246
Year Totals	**1247**	**347,140**
2025	**Page Count***	**Word Count**
January	101	29,462
February	91	25,977
March	98	27,723
April	106	27,605
May	112	33,790
June	108	30,145
July	140	32,728
August	133	39,246
September	115	35,743
October	133	39,032
November	142	42,295
December	159	45,392
Year Totals	**1438**	**409,138**
Grand Totals	***2685***	***756,278***

HAM RADIO WORLD NEWS

5th Annual Youth Dream Rig Essay Contest

Web

THE 6TH ANNUAL YOUTH "DREAM RIG" ESSAY CONTEST IS ABOUT TO GET UNDERWAY!

The contest is sponsored by the Intrepid-DX Group, a California-based 501(c)(3) non-profit organization promoting amateur radio in developing nations. But this year ... a change.

"This year, rather than our past essays, we are seeking well thought-out and clearly communicated project proposals for a public access amateur radio station," said Paul S. Ewing, N6PSE, president of The Intrepid-DX Group.

This year's contest is called "Amateur Radio for the Greater Good." Written proposals may be submitted between November 10 and **December 10, 2025**, by amateurs age 25 or younger, describing how they would establish a club, contest, community, or emergency communication station in a school, church, fire station, community center, hospital, or other public building. The station must be in the USA and only US-licensed amateurs may submit proposals.

"This is a departure from our conventional essay contest," added Ewing. "We are looking for proposals that would place the station in a secure and common area where it could be enjoyed by other licensed amateurs. Once the winning proposal is selected, the proposal author will have sixty days to secure written permission from the owner or guardian of the facility. The written permission must indicate approval for the station and antenna to be installed. The proposal author may be the trustee of the station."

The equipment provided will include an HF transceiver, VHF/UHF transceiver, 13.8V power supply, two 100' lengths of coax, and antennas.

The awardee of the complete station will be announced on **December 15, 2025**.

Proposals may be submitted via email to intrepiddxgroup@gmail.com or via USPS to:

The Intrepid-DX Group
3052 Wetmore Dr.
San Jose, CA 95148

For more information about the Intrepid-DX Group, visit its website at

THIS LINK.

ARRL NEWS & VIEWS

W1AW

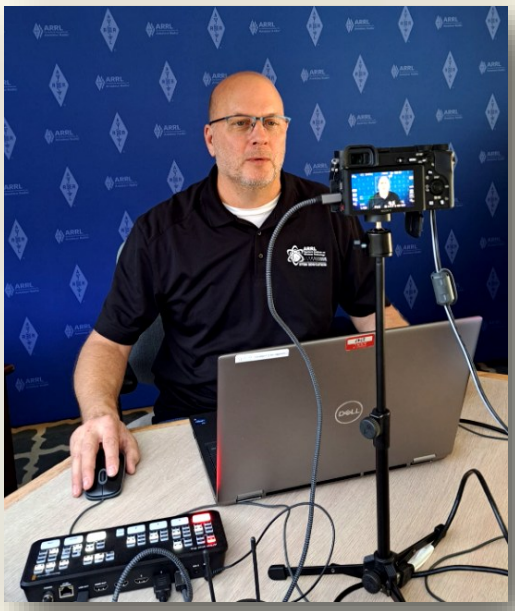
ARRL Introduces New LIVE Online Course for Ham Radio Licensing

11/07/2025

ARRL The National Association for Amateur Radio® has introduced a new, fully-interactive two-day online course for ham radio licensing. The ARRL Technician Class LIVE Video Course includes everything needed to prepare for the FCC Technician Class amateur radio license exam. Enrollment is open now for the inaugural course, which will take place December 20 - 21, 2025.

Join ARRL Education Specialist Wayne Greene, KB4DSF, for this interactive online class. "We're going to have fun!," said Greene. "I'll guide you through operating your first ham radio to how to communicate through amateur radio satellites. We are going to get fully immersed in every question and answer with the info you need to pass the test!"

In addition to live instruction, course participants will receive the popular Technician Class prep book authored by ARRL National Instructor Gordon West, WB6NOA, which has helped thousands of new hams get licensed with fast results. One-year of ARRL Membership is also included, ensuring these new hams will have quick access to all ARRL benefits, services, and programs.



The new ARRL Technician Class LIVE Video Course includes interactive instruction from ARRL Education Specialist Wayne Greene, KB4DSF

Course Includes:

- Two days of LIVE instruction with expert ARRL Education Specialist Wayne Greene, KB4DSF
- Technician Class prep book by Gordon West, WB6NOA
- One-year of ARRL Membership

Those who remember ARRL's recorded video courses of the past will recall how valuable it is to see and hear lively video instruction. This new course will ensure students have an even more personal, interactive experience. Greene will present the material in bite-sized sections, demonstrating just how much fun amateur radio is!

Visit the ARRL Shop to complete the paid enrollment for a special introductory price of $99. Registrants will receive a follow-up email with instructions for registering for the live video course after completing your order. If you have any questions regarding the course, please contact the ARRL Education and Learning Department at 860-594-0285 or email ead@arrl.org.

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THE MAILBAG

LETTERS To The Editor

W7UUU

Alan Guilbault VE7UBA proudly displays his W7DK Logger's Certificate—our first ever sent to British Columbia, Canada! Thanks for sending in your log, Alan!

Dear Editor,

In reading your article [November 2025 Logger's Bark] about repeaters, I thought about the repeaters in my area. First off, you were right about getting on a repeater—you can call out "listening" and it's crickets.

No wonder a newbie gets discouraged about the hobby. In my area, we have approximately 17 repeaters, only two of which are ever used. We have repeaters on UHF that site idle. Being a newbie myself, I spend most of my time using digital modes on 10 meters. I'm hoping to get my general ticket soon.

-Allan KE2EYY
Johnson City, NY

Dear Allan,

Thanks for reading The Logger's Bark and for taking the time to write in. Yes, it's true that in a majority of cities around the U.S., repeaters are sitting idle these days. It's a far cry from my own early days in ham radio in the 1970s when every repeater was packed pretty much all the time. There was never a shortage of folks to talk to, and virtually any callout any time of day would result in QSOs. Not so much anymore, I'm afraid.

But if we all make a point to try to be more active, we can all do our part to bring that activity back.

-Dave W7UUU

From QRZ,

Another great edition of The Logger's Bark magazine! Thanks so much for being the "Member Spotlight" - It is a great honor!

I had a blast being made Team Captain for the W4S Bigfoot Special Event! (Thanks so much for the accolades.) It was so much fun talking with all of the hunters and making some new friends along the way.
I am really looking forward to next year.

Sad that there is only one more edition left for Dave W7UUU as the editor of this great magazine—but all things as in life come to an end.

Hopefully the tradition set forth here will inspire the next editor to continue such pride in publication.

Ronnie NZ4X
Naples, Florida

Dear Ronnie,

Thanks for the kind words—but the honor was ours! You and your team really rocked it as the Swamp Ape W4S station. We really look forward to an even bigger Bigfoot Special Event for next year—see you then!

-73 Dave W7UUU

THE MAILBAG

LETTERS To The Editor

W7UUU

Another proud holder of a W7DK Logger's Certificate, David Maas WØRH from Gray Summit, Missouri—our first sent to this state. Thanks for sending in your log, David!

From QRZ,

Dave, that's a ridiculously large amount of work! Congrats on a great issue!

73 Tom W9YW
Bloomington, Indiana

From QRZ,

I'm blessed to have contributed to another issue of a truly fine magazine. Dave's departure as editor will be a huge loss.

73 - Steve KW4H
Vail, Arizona

Dear Tom & Steve,

Thanks for the kind words. I really appreciate it.

-73 Dave W7UUU

BY JOVE HE PUT OUT A FULL 24 ISSUES! I HONESTLY NEVER THOUGHT HE'D MAKE IT! BUT IT'S BEEN A FUN RIDE. I REALLY LOOK FORWARD TO WHAT THE NEXT BARK EDITOR WILL BRING TO THE TABLE!
BARK

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W7DK LOGGER'S CERTIFICATE

Classic "first award" for Members

HAVE YOU APPLIED for your own W7DK Logger's Certificate?! It's FREE and it's EASY! All you have to do is work at least 10 members of the Radio Club of Tacoma, then send in your list of call signs worked, and BAM! We'll print out your certificate and get it to you toot sweet by US Mail.

There are no confirmations required, no logs to submit, and really no rules other than the call signs you submit must be members of the club. You may work them on HF, 2m FM, on FT8 or SSB or any other mode! In fact, one of the best ways to get your 10 contacts is to check into the weekly Tuesday Night Net on the 147.28 club repeater… every Tuesday at 7:30 PM.

This venerable award was first launched in 1957, using certificate paper printed by club member Dick Ryan, W7RGD using a donated printing setup.

As of the date of this publication, there have been almost 700 certificates issued, including a few reissues over the years to replace lost certificates.

The original certificates were hand-lettered by long-time RCT member Barbara Osborne, W7UYL (SK 2022), and all of the records were kept in a series of recipe boxes still held by the club.

We still have a huge stash of this beautiful OFFICIAL logger's Certificate paper…. So if you do not already have yours, just shoot us an email with your list of call signs worked, and put "Logger's Certificate" in the subject line… ■ *-editor*

Wanna get yours? Send in those contacts!

Barbara Osborne W7UYL in 1955 an RCT USO event

Two recent "firsts"! Our first Ohio (Bob W8RID) and Brazil (Marcos PP5AMP)!

W7DK LOGGER'S CERTIFICATE

SEARCH YOUR LOGS!!! GET *YOUR* CERTIFICATE!

THE W7DK RADIO CLUB OF TACOMA LOGGER'S CERTIFICATE is available to *anyone anywhere who has worked at least 10 members of the club*. It's a long-held club tradition to issue these certificates, with just shy of 700 having been produced since the start of the program in 1957.

Are you active on the HF bands? If you are, it's entirely possible you already have all the contacts you need to get your own Logger's Certificate! And it's really easy to search this.

Almost all modern computer logging systems have a way to search for the county of stations you have worked. For example, in the popular N3FJP Amateur Contact Log (ACL), to find stations that could possibly be W7DK members, just go to the "County" field in the ACL interface, then click "Search". If you have at least 10 results come back, send me the list and I will check to see how many are members!

For those who use QRZ's powerful logbook software, just open your main logbook, click the pulldown menu for "Filter" and select "New". In the "Filter Name" box you could call it "Logger's Certificate" (and then "save" if you want to use this rule in the future) - then in "Select Field" select "Their County", then for "State" pick WA for Washington, and lastly "Compare Value" set to "Pierce County, WA". Lastly, click "Add Rule". Once you do this, you will now see only those logged QSOs that the other station reported Pierce County. Since the Radio Club of Tacoma is in that county, your likelihood of pulling up club members is very high.

Regardless of the logging software you use, most should have a means for searching out county information.

Just note that if you find "Special Event" call signs such as W7F, W7B, etc., those don't count as multiple operators share those call signs during the club's Bigfoot event every October. Only actual FCC-assigned call signs count for the Logger's Certificate. The club call of W7DK or the museum call of W7OS are considered acceptable to use.

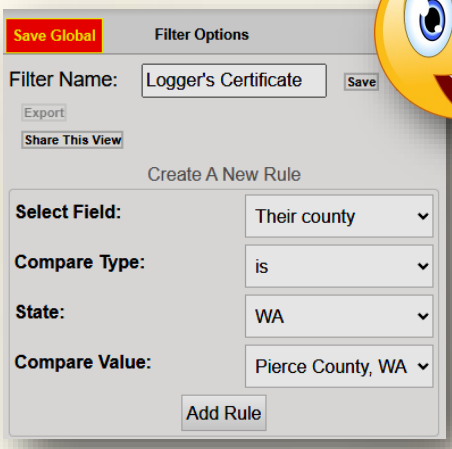
Also consider filtering for Kitsap County (where I live) as we have a number of members there. You could also include King County, but I warn you: it's the largest county in the state, and has a lot of hams—most of whom will not be W7DK members. Searching there will result in a huge list without many "hits".

Wanna get yours? Send in those contacts!

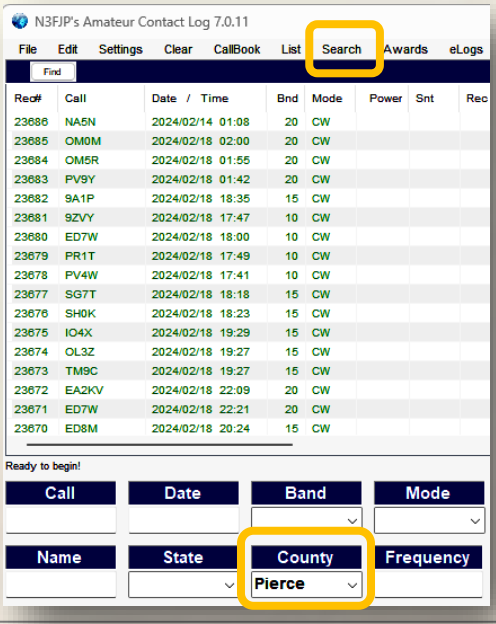
Then just email me the list of calls—you don't need to include anything else: it's the Honor System. I won't be confirming anything other than if the call sign is (or ever was) a member of the club.

So start SEARCHING! I will send you your own beautiful Logger's Certificate free of charge—mailed to your listed QRZ mailing address. In return, just send me a photo of you holding your certificate and I will run that in a future issue of The Logger's Bark!

-Dave W7UUU



Above: *Custom Filter dialog for QRZ Logbook—just search for State=WA, and Value=Pierce (or Kitsap) County*



Left: *Using N3FJP Amateur Contact Log, simply enter Pierce (or Kitsap) for the County field, then click "Search" to see a list of calls from these counties*

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email loggersbark@gmail.com

MEMBER SPOTLIGHT

I tried but I couldn't *possibly* fit everyone in; but a huge thanks to *all* for putting up with my *endless* picture taking every Saturday and at every event! It's all your smiling faces and great attitudes that makes this club what it is.

We couldn't do it without you!

You are ALL this month's "Member Spotlight"!

-73 to everyone, Dave W7UUU

THIS MONTH'S CALENDAR

W7DK

December 2025

	November		December, 2025			January	
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
49	November	1	2 07:30pm 2 Meter Net 147 ...	3 07:00pm Board meeting	4 06:00pm HF Night at the ...	5	6 10:00am Open House
50	7	8	9 07:00pm VE License Exam ... 07:30pm 2 Meter Net	10	11 06:00pm HF Night at the ...	12	13 10:00am Open House 01:00pm General meeting ...
51	14	15	16 147 ... 07:30pm 2 Meter Net 147 ...	17	18 06:00pm HF Night at the ...	19	20 10:00am Open House
52	21	22	23 07:30pm 2 Meter Net 147 ...	24	25	26	27 10:00am Open House
1	28	29	30 07:30pm 2 Meter Net 147 ...	31 04:00pm Straight Key Ni ...	January	January	January

Recurring | Special | Contests | All Categories ...

Did You Know??

In the early Anglo-Saxon calendar, December (and January) were collectively called *Gēolamōnab* , which translates to "before Yule-month". That meant the wintry interval was treated as a single season of solemnity rather than separate months. In other words, the modern split into December and January didn't exist then (outside of the Roman calendar) — it was one long "Yule time" stretching across the dark days.

AROUND THE CLUBHOUSE

But first…. A little *about* the Clubhouse

THE RADIO CLUB OF TACOMA IS UNIQUE not only in its age (continuously operating since October 1916) but also in its ownership of an actual clubhouse and adjacent parking lot. The current clubhouse was purchased by members in 1957 (the previous clubhouse was purchased in 1927!) and has been maintained on this site ever since. But it takes time, talent, and treasure to keep this dream a reality. Club membership is one of the solid ongoing means with which the club maintains not only members to help with the upkeep, but to also raise the capital that's required to keep our clubhouse in tip-top shape.

If you are not yet a member, please consider joining—even if you're not local! If you enjoy reading The Logger's Bark from afar, you can be a part of our club just as if you were here. And if you are a local, please consider contributing your own skills and effort to keep this club the wonderful thing it is. Ask any officer how you can help. Thanks to all our loyal members! *-Dave W7UUU*

Photos on left from RCT Archives—photos on Right by Dave W7UUU

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AROUND THE CLUBHOUSE

W7DK

All About the Saturday Clubhouse Hosts

IF YOU HAVE EVER ATTENDED AN OPEN HOUSE SATURDAY at the Radio Club of Tacoma, you were probably greeted at one time or another by that week's Duty Officer and Clubhouse Host. This is an official volunteer position at the club, and one that pretty much any local member can fulfill and have a great time doing it! There are five host positions: 1st Saturday through 4th Saturday, plus Last Saturday (when the club serves up a by-donation lunch for anyone who wants one).

If you would like to be a Clubhouse Duty Officer and Host, just ask any officer. The job is pretty easy—open up the building around 9:00 AM, kill the alarm, turn on the lights and heat (if needed) and start the coffee. At the end of the day around 2:00 just reverse the process. There's a bit more to it than that of course, but that's the general ideal. It's a great way to get to know your fellow club members better! Just let an officer know and we can get you on the docket to be a new host!

-Dave W7UUU

Warren NG7G
Third Saturday

Paul W7PFU
Last Saturday

Mike W7MKE
First Saturday

Phil K7PIA
Second Saturday

Doug AB7DG
Fourth Saturday*

The Club's Current Staff of Duty Officer Hosts

**In months with a 5th Saturday*

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Open House Reminder!

THIS IS JUST A WELCOMING & REMINDER that the W7DK Radio Club of Tacoma Clubhouse holds an open house on most Saturdays of the year (click HERE for exclusions) from 10:00 AM to 2:00 PM. There's always a nice group of members but ALL visitors interested in amateur radio are welcome to stop by! You do not have to be a member or even a ham to visit us. Please be sure to sign the Visitor's Logbook in the kitchen, say hello to your Clubhouse Host, have a cup of coffee and a donut (always a nice assortment on hand). You may wander the building—visiting the classroom, the downstairs "shack parlor" we call The Lou Room, and of course upstairs to see the main HF room and the W7OS Doc Spike Memorial museum—a living collection of vintage gear that regularly gets on the air.

The last Saturday of every month, we hold a mini flea market where members can sell their ham gear. But even non-members are eligible to dicker for deals and take home gear. And starting around 11:30, our club Chef Paul W7PFU serves up free chilidogs, or sometimes burgers or spaghetti at the chef's whim. We hope to see you stop by soon!

■ *-editor*

Mini-Swap Meet Monthly

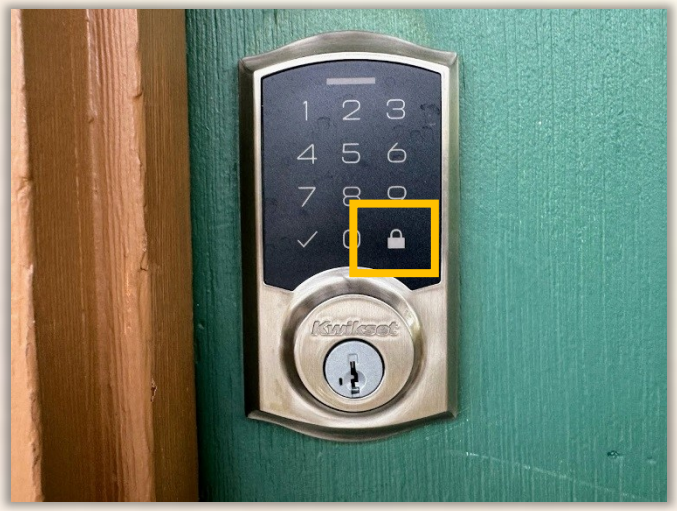
DO YOU HAVE EXCESS GEAR TO SELL? Members of The Radio Club of Tacoma have a little perk every month with our own mini Swapmeet held in the clubhouse on the last Saturday of each month. No charge for a table—just bring your wares and set up shop! Non-members and visitors are free to stop by and see if they can pick up bargains. The club also has gear donated regularly that is made available to visitors and members alike, available for purchase via donation. And of course, as mentioned in the Open House reminder, the club chef Paul W7PFU cooks up chilidogs or spaghetti (whatever suits his mood!) at no charge for guests. ■ *-editor*

How To Lock The Doors

AS WAS REPORTED in last month's Bark by our club Secretary, Gary WG7X, in recent months there have been reports of the clubhouse being found unattended and the doors not even locked! Obviously, this is not acceptable. It's the responsibility of the Club Hosts on Open House Day (Saturday) or those who have door and alarm codes on other days to make certain the building is secure when leaving.

But should you be in the position of being the "last one out", you can still LOCK THE DOOR even if you don't have the code or a key. Simply pull the door closed and push the "lock symbol". The battery-powered mechanism will then lock the door (you won't be able to get back in without the code!). This applies to both the front door and the back door. See photo below—note the "lock" button.

-Dave W7UUU



Help Keep The Clubhouse Clean

THIS IS JUST A GENTLE REMINDER that the W7DK Clubhouse is for all members to use and enjoy, and is a place to put our best foot forward as a club for visitors we welcome in almost every Saturday of the year.

Please be mindful of leaving trash, empty cans or bottles, food wrappers, McDonalds bags, and whatever else. Same holds for coffee cups… we frequently see cups left on classroom tables, the kitchen counters, at the Lou Room table, and wherever else. Please just make sure to "pick up after yourself". Also, remember that liquids and radios don't mix. Please don't take cans or cups of beverages into the HF room or the Museum—just water bottles with lids or closures of some sort. And no "sticky foods" like donuts! No one wants to reach for the tuning knob only to find your sticky donut residue on it!

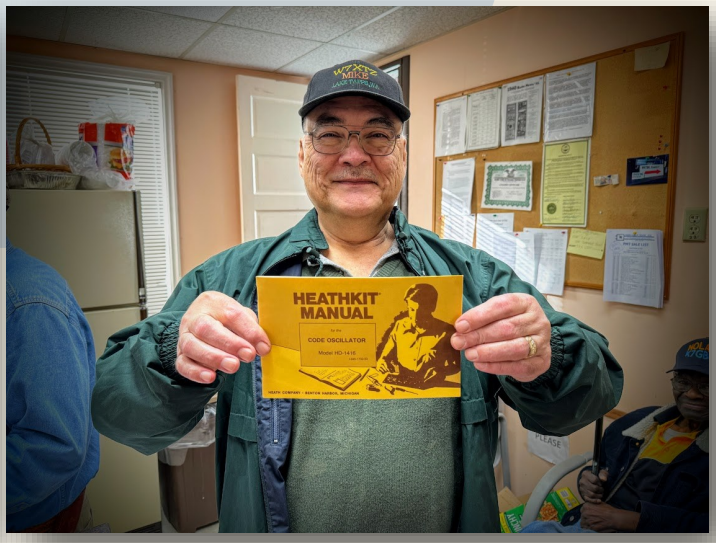
AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Bob K7MXE checks out some goodies sent by a friend in another state

Julie W7JUL visits in the classroom while Doug AB7DG focuses on some work

Good friend Jim W7VK catches up with Anne N7ANN on a recent Saturday morning



Mike W7XTZ presents your editor with a nice new-condition Heathkit HD-1416 manual. Thanks Mike!!

All photos this page provided by Dave W7UUU

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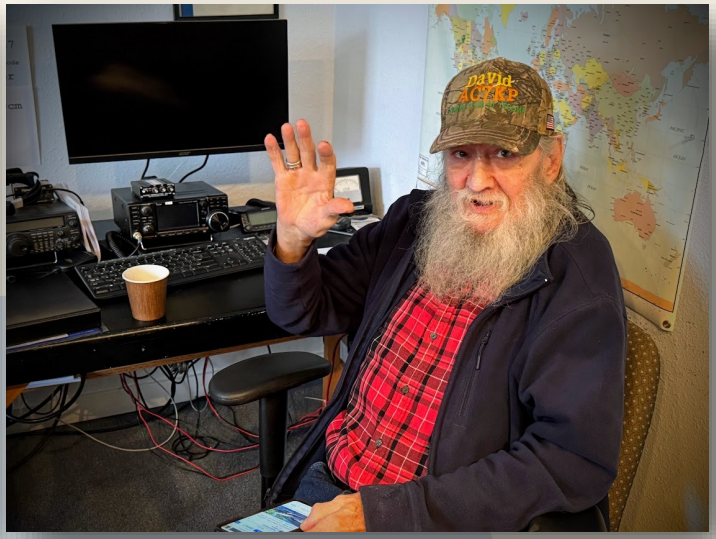
AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

President Adam W2NCC visits over coffee with Anne N7ANN



David AC7KP says howdy from the HF room

New dual-monitor computer system installed in the Property Team Lockup—this is really helping streamline things

Jeff W8NGS is taking advantage of the new system to sort through a mountain of recent club gear donations

All photos this page provided by Dave W7UUU

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AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Scott KA7IOX visits in the Lou Room with Dave KK7NYW

"Bigfoot Special Event" coordinator BJ KO7T mugs for the camera in his Bigfoot shirt!

Gary WG7X is assessing a large donation just received, and is currently in triage under a tent due to the rain showers

Mike W7MKE and Mike W7XTZ catch up in the club kitchen

All photos this page provided by Dave W7UUU

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AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Walt WA7SDY at his usual tables for the Last Saturday Mini Swapmeet at the clubhouse

Gary WG7X hanging out in the HF room

Welcome to visitors Vicki KD7YPO and Porter KD7YPP. They both took classes at the RCT twenty five years ago! Welcome Back!

Chef Paul W7PFU and friend Nolan K7GBM always with a smile, gearing up for Hotdog Day in the clubhouse

All photos this page provided by Dave W7UUU

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

John N7TES tending wares in his space in a recent Last Saturday mini-swapmeet

Stephen AD7AB and Phil K7PIA hanging out in the kitchen

Phil KC7PS hanging out with the group in the Lou Room

Phil K7PIA and Mike W7XTZ assist in the triage of a recent large donation to the club

All photos this page provided by Dave W7UUU

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AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Doug AB7DG and Dave N7HT visit in the classroom

John KJ7SJM stops by the W7OS museum on a recent Saturday to check out the old gear

A Heathkit SB-220 amplifier at a crazy low price was a point of curiosity by many—but it needs some work to get running again

Cathi W6PSY, Kathryn K7USR, and David AC7KP visiting in the Classroom on a recent Saturday

All photos this page provided by Dave W7UUU

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AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Secretary Mike W7MKE arrives at the clubhouse with an armload of incoming mail for the club

""The Gang's all Here" classroom edition on a recent Saturday Open House

Chef Paul W7PFU chats it up with Brad KK7YQC

John N7TES and Dan K7MM transact a deal at today's Last Saturday Mini-Swapmeet

All photos this page provided by Dave W7UUU

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AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Mike W7XH selling shirts as Bob K7MXE looks on and Anne N7ANN contemplates which one to buy

John KJ7SJM says howdy from the Lou Room

"The Gang's all Here!" Lou Room edition on a recent Saturday open house

Elen AI7FP hanging out in the classroom

All photos this page provided by Dave W7UUU

AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Anne N7ANN hanging out in the library

Phil K7PIA gives thumbs up on a recent Saturday

L>R: Randy KK7RHR, Nathan W7BUG, Phil K7PIA and Sam N9MII puzzling over a curious $10 Goodwill Store find that turned out to be an ancient 2m transceiver!
Photo by Becky KG7FZH

Always with a smile for the gang, Phil KC7PS waves to the camera

All photos this page provided by Dave W7UUU except as noted

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AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Scott KA7IOX and Nolan K7GBM hanging out on a recent Saturday visiting in the Lou Room

Walt WA7SDY waiting for the 40m Noontime Net to start on a recent Saturday morning

New lineups being changed around in the W7OS Doc Spike Memorial Museum station, operating position #1

A drake TR4 with RV4 now graces the W7OS Museum, operating position #2

All photos this page provided by Dave W7UUU

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AROUND THE CLUBHOUSE

Recent Photo highlights from the Clubhouse

Bob K7MXE yuks it up with Dave W7UUU
Photo by Anne N7ANN

Wade W7ITL hanging out in the RF Lab

Anne N7ANN visits with Membership Mike W7XH

Phil KC7PS and Phil K7PIA hanging out in the Lou Room on a recent Saturday

All photos this page provided by Dave W7UUU except as noted

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AROUND THE CLUBHOUSE

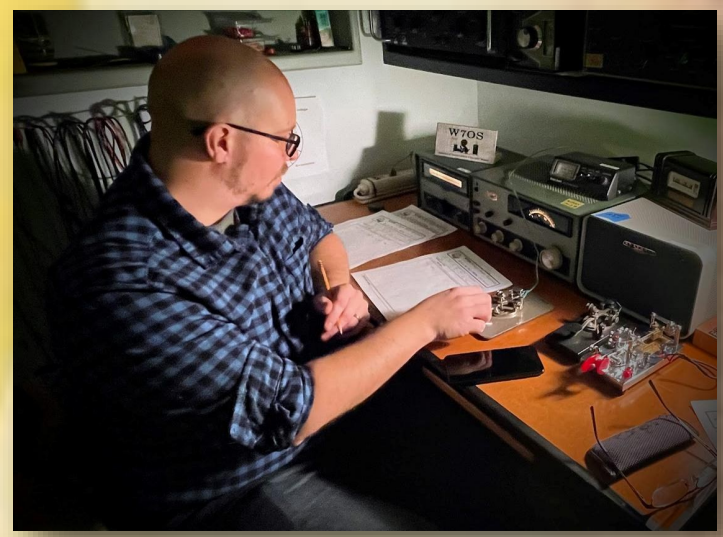
Recent Photo highlights from the Clubhouse

W7DK

December Birthdays!!

Call	Name
W0DID	Shane Maloney
WA7BMK	Brendan Keyport
KB7UXT	Ken Scott
WB4SPB	Randy Myers
WA7JIM	Jim Swanson
W7VB	Rob Benton
W7MPC	Mike Cummings
KF7FEA	Jerry Garman
W7MWF	Michael Finnie
KF7SOW	Sue Schub
WA7ILB	Robert Smith
W7TJL	Tom Lesick
KG7ONO	Norma Purdom
NL7BI	Terry Griffin
KJ7BDD	Michael Boisture
KJ7LEA	Bryan Anderson
KK7BMF	Stephen Johnson
AD7MA	Manny Adonis
N0NHJ	Lloyd Kimball
KK7IJZ	Rebecca Sharky
K7DRQ	Quentin Caudron
N7KCG	Rob Giden
KK7ODX	Kama Bigbee
K7IPT	Leah Ives
KB7BYC	JoAnne Decker
KK7SAQ	Rachel Perez
KA6HUM	Dick Johnson
WS8O	Lenny Sechrist
AF7CJ	Kathryn Smith
KK7VKS	Michael Gomez Jr
AG7KO	Scott Slater
K9OSC	Bob Brock

Happy Birthday Leah K7IPT!



Happy Birthday Quentin K7DRQ!

photos by Dave W7UUU

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MOST EVERY THURSDAY EVENING from 6PM until 9PM, the Radio Club of Tacoma opens the HF room for one-on-one training time. Saturdays are a great time to come see the clubhouse and socialize, but often it's tough to get "quality time" with the radios. This weekly event is open to all—members and non-members alike. There is always at least one Extra Class operator on hand with a solid knowledge of the Icom and Flex radios in use, as well as the antenna patch bay, amplifiers, and tuners. Even non-licensed "hams to be" can take a hand operating under the tutelage and watchful eye of an experienced "Elmer" on hand to show the ropes. Other nights, the club takes on build-it projects in the classroom—Come on by any Thursday!

■ *-editor*

L>R: Sam N9MII, John K2CCT, Stephan AD7AB, Al N7OMS, Phil K7PIA, Bob AD7LG, & Javier KM7AQN at a recent Thursday Evening session Photo by Mike W7MKE

L>R: John K2CCT, Sam N9MII, Dave AC7KP, Julie W7JUL, Dave W7GEL, & Carson KJ5MEW at a recent Thursday Evening session Photo by Mike W7MKE

Great gathering of members for a recent Thursday HF Evening—gearing up to get on the air L>R: Julie W7UL, Jeff W8NGS, Al N7OMS, David AC7KP, Dan KD7SV and Dave W7GEL (back of head)

Photos by Mike W7MKE

© Radio Club of Tacoma W7DK

CLUB ACTIVITIES

RCT 4th Wednesday Workshop

The Radio Club of Tacoma's 4th Wednesday Activity Night is a fairly regular event, allowing members to have "hands on" experience building practical ham radio projects—kits, antennas, baluns, you name it. It's a great time for newer hams especially to join in a fun social and learning time at the RCT clubhouse. There are always skilled mentors ("Elmers") on hand and usually the cost for attendees is minimal. Keep an eye on the Radio Club of Tacoma website for announcements of upcoming 4th Wednesday workshops at www.W7DK.org of just ask around the clubhouse on any Saturday Open House day. Photos on this page are from a recent such event where attendees learned how to assemble a roll-up J-Pole antenna for 2m and 70 cm under the guidance of member and ARRL Western Washington Section Manager Bob AD7LJ (yellow shirt) and Paul K7OSS behind him in a blue shirt. ■ *-editor*

Photos provided by Doug AB7DG

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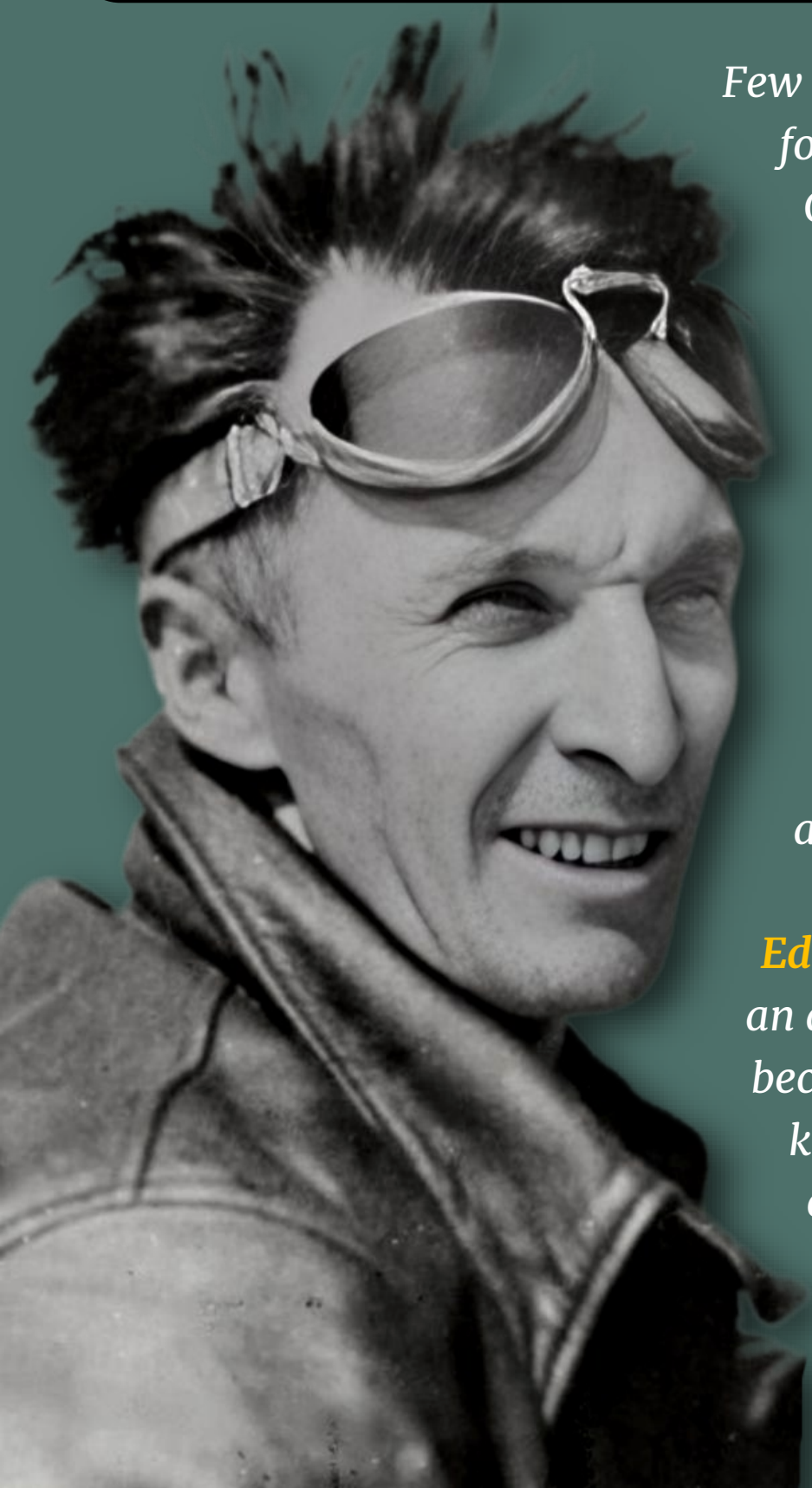
HEATHKIT®

A BRIEF HISTORY



Few hams today know that the founder of the Heath Company was not an amateur radio operator... he wasn't even involved in electronics. The early 20th century not only gave birth to hobby electronics through the advent of radio—it was also the dawning of amateur aviation.

Edward Bayard Heath *was an airplane man. His name became famous for electronic kits only by the long chain of events that followed his death. Events he could not have imagined.*

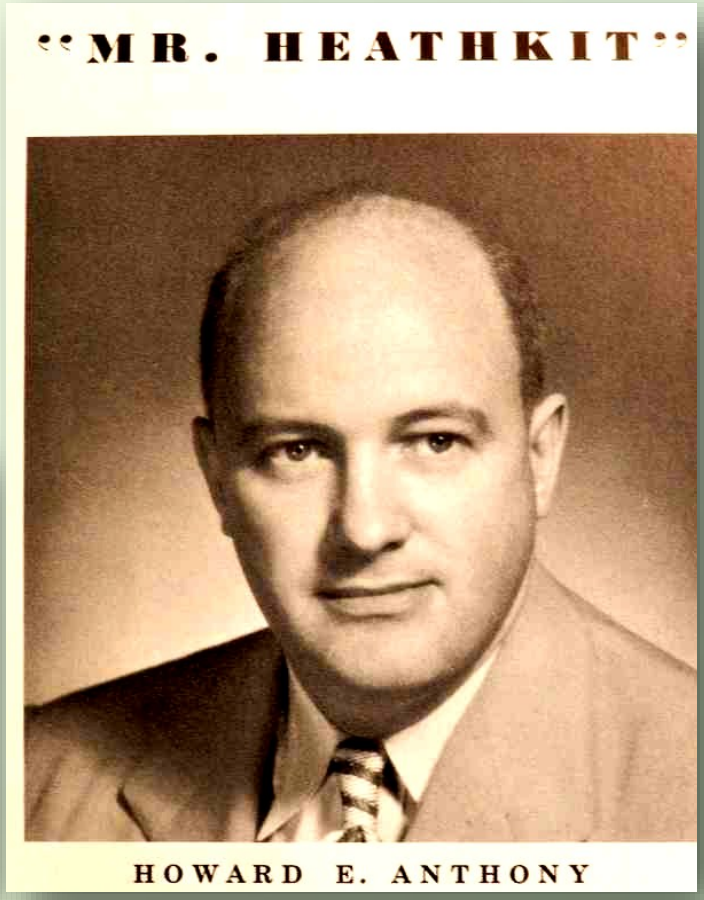
HEATHKIT®
A BRIEF HISTORY

BORN IN 1888, HEATH CAME OF AGE IN THE ROARING, improvisational years of early aviation, when a talented mechanic could build a plane in a shop and fly it from a pasture. He acquired the Bates Aeroplane Company in 1912 and turned it into the E. B. Heath Aerial Vehicle Company in Chicago, producing a variety of light aircraft. His biggest success was the little parasol-wing sport plane that bore his name — a simple, inexpensive single-seater powered by a converted motorcycle engine. Heath sold it in kit

E.B. Heath Parasol airplane at Oshkosh, WI Airport in 2003
By FlugKerl2 - Own work, CC BY-SA 3.0, LINK

form, an idea that was far ahead of its time, allowing homebuilders to own and fly a real airplane for a fraction of the cost of a factory model.

That vision came to a sudden end on February 1, 1931, when Ed Heath was flying a new low-wing prototype in Maine Township, Cook County, Illinois. The airplane crashed during testing, killing him instantly. The loss left the company without its founder, and the small business floundered for several years before being picked up by a man who would take it in an entirely new direction.



Howard E. Anthony—the visionary behind the electronic kits era of the Heath Co.—Under Anthony, the Heathkit brand was born

Howard E. Anthony bought the bankrupt Heath company in the mid-1930s — 1935 and 1937 are both often cited as the year — and moved it to southwest Michigan in the Benton Harbor area. For almost a decade, the business stayed in the aviation parts and accessory trade, but Anthony was always on the lookout for new opportunities. After World War II, the U.S. government auctioned off mountains of surplus military equipment, and Anthony became a regular buyer. The Benton Harbor facility filled up with cathode-ray tubes, radio tubes, transformers, meters, capacitors, resistors, and chassis from wartime test gear. At first he sold these as individual items to experimenters and servicemen.

HEATHKIT®

A BRIEF HISTORY

The real inspiration for the birth of Heathkit came in October of 1946 when Anthony received in the mail his copy of Radio News Magazine. On page 40 appeared an article by one Lyman E. Greenlee entitled 'Build this 5" CATHODE-RAY OSCILLOSCOPE'. A few years ago, I came into possession of Howard's personal binders of Radio News and right in the margins of the article and on the Greenlee schematic he made notes for minor engineering changes to the DIY project. One year later, in October 1947, the first Heathkit was born—simply advertised as the "5 inch oscilloscope" - a complete kit based on that article.

Build this 5"
CATHODE-RAY
OSCILLOSCOPE
By
LYMAN E. GREENLEE
Details for construction of cathode-ray oscilloscope. Government salvage tubes and parts are now available.
THE NEW
HEATH 5" OSCILLOSCOPE
Complete kit to build a beautiful 5" scope, cabinet, chassis and panel punched, formed and lettered. Every part supplied, including tubes with 5BP1, cased power transformer, oil condenser. Frequency compensated amplifier, 15 to 30M cy. sweep, all controls, blueprint and instructions. This kit makes an excellent training course. Complete. $39.50
RN-55-J14842-48
HOWARD E ANTHONY
BOX 642
BENTON HARBOR MICH

Howard E. Anthony's personal copy of Radio News Magazine, October 1946, showing the 5" oscilloscope project that would become the very first Heathkit product the very next year, first advertised in October of 1947 as seen in the inset photo. The margin notes and red penicil marks are from Anthony. Magazine photo by Dave W7UUU

HEATHKIT®
A BRIEF HISTORY

This oscilloscope kit, without an actual model number (although later it was referred to as the O-1), came with a silk-screened aluminum front panel, pre-punched chassis, all the parts, and a schematic. This was long before the amazing assembly manuals that would come later. There was no actual assembly manual at all. But if he could read a schematic and "figure things out", a competent amateur could build a laboratory-grade instrument for a fraction of what a factory-built scope cost. It was the first Heathkit — and the beginning of a brand identity that would endure for decades.

This first scope kit sold out 100 units in less than a month, at $39.95 each. It was deemed a phenomenal success, and by Christmas that year, a "new and improved" version was on the market, but this time thousands were produced.

It didn't take long for Anthony & Co. to begin expanding the Heathkit offerings substantially, and growth and sales soared. By the late 1940s into the early 50s, the Heath Company had grown to be a major employer in the Benton Harbor area, and Anthony quickly became a wealthy man by his late 30s. So wealthy in fact that in 1949 he commissioned none other than famed architect Frank Lloyd Wright to build his dream home at 1150 Miami Road in Benton Harbor. Completed in 1951, Anthony spent a reported one million dollars on the property, house, and furnishings (furnished by Wright's firm as was the custom for Frank Lloyd Wright homes). It sits atop a ridge with a wooded ravine below and a view of the St. Joseph river. I visited the house in March of 2017, and by then it had fallen into disrepair. A subsequent visit last year showed it in ever greater decline. Sadly, the "mansion district" near Anthony's home has that look in spades, as decades of neglect have taken their toll on once-amazing homes. Referred to as "The Anthony House", it's still listed in the SAH Archipedia of FLW-designed homes.

Dave W7UUU in front of The Anthony House, 1150 Miami Road in Benton Harbor, March 30, 2017.
Photo by daughter Jennifer Ellison

HEATHKIT®
A BRIEF HISTORY

Another testament to Anthony's success at this time was that he had outgrown the seating capacity of his small private plane used for company business. In 1954, he purchased a nearly brand-new De Haviland Dove passenger plane capable of carrying up to 8 passengers with 2 crew members. On July 23, 1954 Anthony and several close friends (including artist and designer for the Heath Company, Irwin Suffill, who was Anthony's best friend) left in the new plane from an airstrip not far from the Heath factory, bound for Miami to drop off two passengers, and on to the Bahamas for a 2-week vacation.

However a few hours after taking off, the plane encountered severe storm weather and broke up mid-air, crashing on Sale Creek Mountain, Tennessee. All six aboard perished. Howard Anthony was only 42 years old. For a second time, a tragic plane crash ended the dreams of the owner of the Heath Company of Benton Harbor.

During my trip to visit the Heath Co. sites in March of 2017, I brought an engraved "Mr. Heathkit" granite plaque to affix to Mr. Anthony's grave (with permission from the family, who were in attendance that day, as well as the local press).

His widow Helen made an effort to take over the company after Howard's passing, but it was just too much for her. So she sought a buyer, and within a year, she sold the Heath Co. to the Daystrom Corporation.

Dave W7UUU at the site of Howard Anthony's grave, affixing an engraved plaque of "Mr. Heathkit" - March 2017
Photos by daughter Jennifer Ellison

HEATHKIT®
A BRIEF HISTORY

Daystrom already owned other electronics firms and brought professional management and broader distribution to Heath. Then, In 1962, the massive conglomerate firm Schlumberger Limited acquired Daystrom, giving Heath access to deeper resources and an international reach. This is the beginning of the massive growth era of the Heath Co. into not only ham radio gear, but kit-based products for virtually all aspects of modern life.

In April 1966, David Nurse was appointed president, and under his leadership Heath grew to a scale that would have been unimaginable in the Anthony years.

The Heathkit factory at 230 Hilltop Road in St. Joseph, Michigan ca. 1968
Photo: Heath Co.

Front entrance of the former Heathkit factory as seen on March 30, 2017
Photo by Dave W7UUU

By the mid-1960s the St. Joseph, Michigan plant was one of the largest employers in Berrien County, with over a thousand people on the payroll at its peak. It had its own post office and ZIP code. For local mail, no street address was necessary — "Heath Company" was enough. Kit boxes and cartons rolled down long conveyors, manuals were printed in-house, and the parts bins seemed endless. Orders came in by mail and by phone.

HEATHKIT®
A BRIEF HISTORY

Amateur radio was one of the Heath Co.'s crown jewels, and if all ham kits were combined in a single issue over the many years, the product line in that category alone could fill an entire large catalog.

In the late 1950s and early 1960s came the so-called "Indian Radios" — big, dark green boxes with shiny chrome knobs, rigs all named after Native American tribes. This concept was the brain-child of Heathkit Chief Engineer Roger Mace. Mace's wife was of Native American heritage, and they conceived of naming Heathkit products with model names reflecting various Native American tribes and themes. Heathkit's Director of Engineering, Glen Fiebich, liked the idea, and thus were born the "Indian Radios" as Heath Co. termed them. The Mohawk RX-1 receiver paired with the Apache TX-1 transmitter, with the Warrior amplifier and other matching accessories, etc.

These rigs were bold in styling and solid in performance, aimed at the serious ham who wanted high-power AM and later SSB capability without paying Collins prices. At least eight major products followed this naming scheme (although they had actual model numbers as well). Following Mace's departure from Heath in 1960s, the naming scheme was quietly dropped and model numbers carried forward instead.

Next in the evolution were the HW-22, HW-32, and similar monoband SSB transceivers. Compact, affordable, and simple to build, these rigs opened up single-sideband to hams who might otherwise never have tried it due to cost and complexity.

These were followed by the popular HW-100 and HW-101 five-band transceivers, which quickly became shack staples for hams around the world

These rigs offered full HF coverage from 80 through 10 meters with very respectable performance in a straightforward kit at a great price.

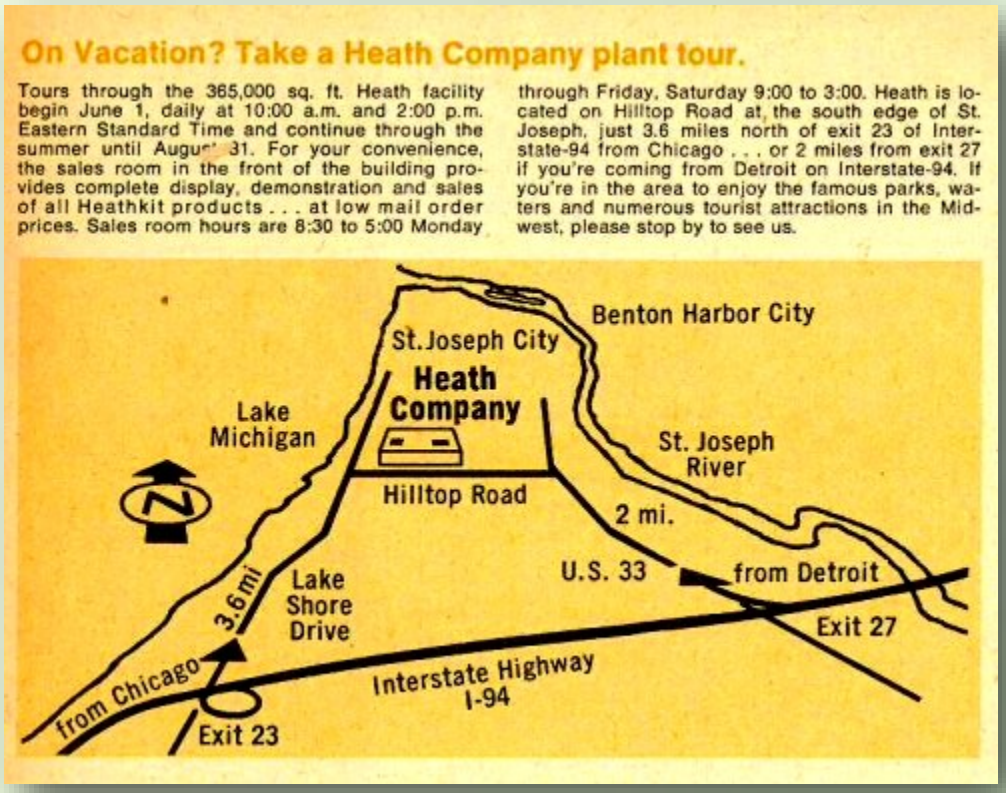
At the top end came the SB-100, SB-101, and their successors — higher-performance HF transceivers with features and specs that rivaled commercial equipment—the SB-101 was often referred to as "the poor hams Collins". (I had an SB-101 as my first SSB rig as a new General in summer of 1975).

Dave W7UUU age 14 (WB7AWK back then) - July 1975 shack view showing my (used) Heathkit SB-101 transceiver. Photo by Doc Spike W7OS—he always left his QSL card in photos of Radio Club of Tacoma members back then as his signature. I had worked him the week before, and he brought the card with him to take my photo for the club photo archives.

HEATHKIT®
A BRIEF HISTORY

The SB series also included separates: receivers, transmitters, and matching accessories like the SB-610 station monitor and the SB-614 station console. Heath's ham catalog rounded out with tuners, antenna couplers, microphones, keyers, test instruments, and the famous line of HF amplifiers — the SB-200 and the higher-power SB-220.

These amplifiers are still in regular use today in thousands of shacks around the world, a testament to their rugged design and the ready availability of spare parts.


On Vacation? Take a Heath Company plant tour.
Tours through the 365,000 sq. ft. Heath facility begin June 1, daily at 10:00 a.m. and 2:00 p.m. Eastern Standard Time and continue through the summer until August 31. For your convenience, the sales room in the front of the building provides complete display, demonstration and sales of all Heathkit products . . . at low mail order prices. Sales room hours are 8:30 to 5:00 Monday through Friday, Saturday 9:00 to 3:00. Heath is located on Hilltop Road at the south edge of St. Joseph, just 3.6 miles north of exit 23 of Interstate-94 from Chicago . . . or 2 miles from exit 27 if you're coming from Detroit on Interstate-94. If you're in the area to enjoy the famous parks, waters and numerous tourist attractions in the Midwest, please stop by to see us.
Benton Harbor City
St. Joseph City
Heath Company
Lake Michigan
St. Joseph River
N
Hilltop Road
2 mi.
U.S. 33
from Detroit
3.6 mi
Lake Shore Drive
Exit 27
Interstate Highway I-94
from Chicago
Exit 23

At its peak in the mid-1970s, the Heathkit factory had expanded to 365,000 square feet in a massive building overlooking Lake Michigan. They offered daily factory tours. How I would have loved to tour the factory then!

But Heathkit was never *just* about ham gear. The catalog was a treasure trove for anyone with a soldering iron and a bit of curiosity. There were hi-fi stereo amplifiers, FM tuners, and entire home stereo systems. There were color and black-and-white TV sets — some of them pioneering in their use of modular construction and early solid-state circuitry. There was automotive test gear: engine analyzers, ignition scopes, and timing lights. Heath even sold electronic organs, guitar amplifiers, and other musical instruments in kit form. And for the home, there were clocks, weather stations, digital thermometers, and intercom systems. If it could be built in a modest shop with hand tools, chances are Heath offered a kit for it at some point.

Part of the magic was how Heath marketed all of this. Every year brought a new full-line catalog, *thick* with color photos, specifications, and prices, along with a sprinkling of technical tips. Around the holidays, Heath would mail out special Christmas catalogs with featured products and seasonal specials. Hobbyists — especially hams — looked forward to those catalogs the way kids looked forward to toy catalogs. They weren't just price lists; they were dream books, and more than a few pieces of Heath gear started as circled items in those pages. Even today, there are many collectors who have entire libraries of the old Heathkit catalogs.

HEATHKIT®
A BRIEF HISTORY

However, by the end of the 1970s, things started to change. In 1979, the Zenith Corporation bought Heath to acquire its growing computer business, which had begun producing microprocessor-based systems for hobbyists, educators, and eventually commercial users. The ham and consumer electronics lines continued for a while, but competition from inexpensive, factory-built gear was taking its toll. During this era, smothered by the trap of "the home computer" that was the siren song of so many companies, things really started to slide at the Heath Company under the Zenith ownership. By the mid-1980s, the market for large, labor-intensive kits was shrinking at the same time as cheap Asian imports for such products was steeply on the rise.

1975 Heathkit SB-104A transceiver full lineup in the shack of Dave W7UUU

As Zenith focused more on computers, the amateur radio segment became less of a priority. Model introductions slowed, and by the early 1990s, it was clear that the era of mass-market ham kits was ending. In March 1992, Heath announced it was leaving the kit business entirely. For the ham community, it was the end of an era that had lasted nearly half a century.

After that, the Heath name passed through a succession of owners. Parts of the business continued under Heathkit Educational Systems, producing training materials and kits for schools and vocational programs. Financial troubles eventually led to a shutdown in 2012.

The Heathkit brand was purchased in 2013 by a small investor group that promised a revival. A few new kits and products have appeared under the Heathkit name since then, but the scale and variety of the original operation are gone and not likely ever to return. The combination of abundant surplus parts, a large base of technically inclined customers, and a nationwide mail-order infrastructure belonged to a very specific moment in American life.

Today, Heathkit is remembered not just for the products but for what it represented: the idea that you could own serious, high-performance equipment and understand it down to the last resistor *because you built it yourself*. Whether it was a ham transceiver, a stereo amplifier, a test instrument, or a color TV, a Heathkit was more than a box of parts — it was a personal project, a learning experience, and, when finished, a source of pride for the builder. As one who built a number Heathkits myself, I can fully attest to that feeling. That legacy still glows in the Heath rigs and amplifiers that remain in service, in the catalogs that collectors keep on their shelves, and in the memories of the countless builders who, for a few hours or days at the workbench, were part of the Heathkit story.

-Dave W7UUU

Cold War Soviet Era QSL Cards

ON A RECENT SATURDAY, GARY WG7X BROUGHT A SURPRISE to the clubhouse… it was his collection of Cold War Soviet era QSL cards from hams and SWLs from within the former Soviet Union. Despite the tensions of the times, the goodwill of amateur radio managed to overcome adversity, and hams in the U.S. were able to make contacts in the 15 Union Republics. But for hams on the Soviet side, scrutiny was far more extreme than that for nations on the outside. Most hams (or SWLs for that matter) who were around in those times recognized the reference to "BOX 88 MOSCOW"—the single destination for all in-bound and out-bound QSL cards to all hams and SWLs in the Soviet Republics.

Needless to say this was for screening and possible censoring of written communications, especially with operators outside of the Eastern Bloc. Cards from Republic to Republic routed through the local bureaus but any and all QSLs coming in or going out of the Soviet Union had to be processed through BOX 88 MOSCOW. Think of it as a highly-controlled QSL bureau.

The pages that follow will highlight some of the many cards that Gary amassed during those years, both as a result of ham radio contacts but also those received as SWL reports for contacts that Gary was making with other hams around the world.

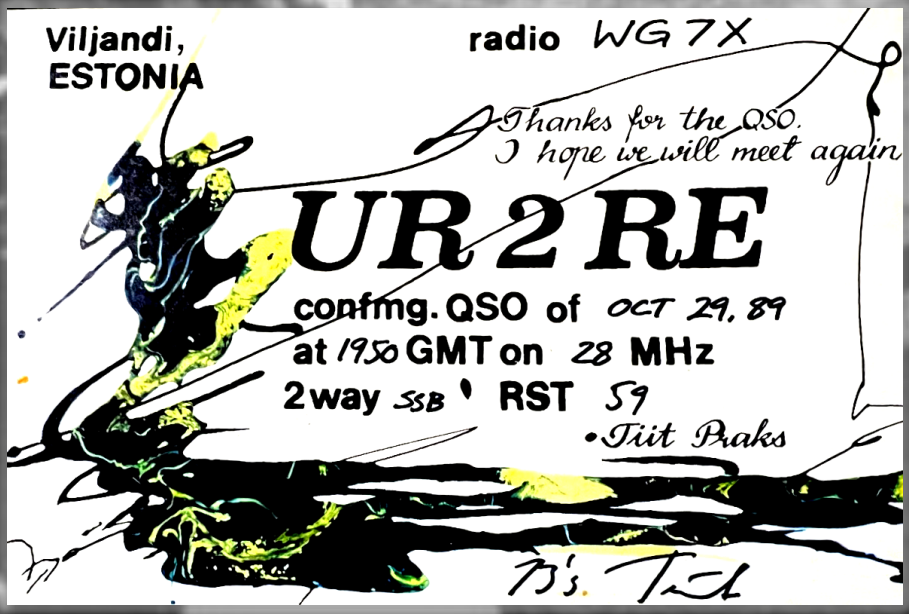
Thanks to Gary WG7X for sharing a part of his collection.

-Dave W7UUU

The design of this card was very common during the Cold War era for both amateur radio operators as well as SWL stations. It represents Soviet cosmonaut Yuri Gagarin, the first human to travel to space, aboard Vostok I on April 12, 1961. For almost 3 decades after, the Vostok I appeared on QSL cards issued by Soviet hams to their western counterparts. In this case, it is an SWL card received by Gary WG7X in 1990.

Cold War Soviet Era QSL Cards

trailed combination placement drill —
A GUARANTEE OF IMPROVED
YIELDS AT HARVEST
JUKO
TRAKTOROEXPORT
VALGA-JUKO 4000
21/5, KUZNETSKY MOST, MOSCOW, 103031, USSR TELEPHONES: 221-56-07, 923-13-38 TELEXES: 411273, 411274



Hams behind the Iron Curtain were used to making do with whatever they had—both in daily life and in their radio hobby.

In this case, a promotional postcard for the Valga-Juko 4000 seed drill, built in the Baltics, got a second life. Flipped over and repurposed, it served not only as a QSL card for Gary but also as a bit of advertising for what was likely the factory where Tiit Praks, *UR2RE*, worked—not long before the Soviet Union's collapse.

Tiit Praks later became
ES7RE - SK April 2021

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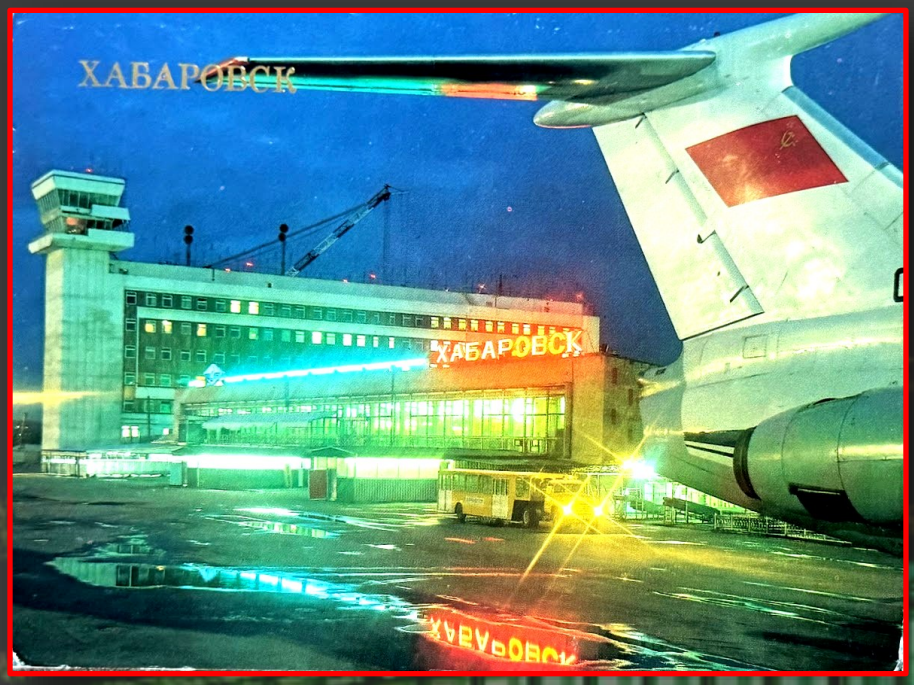
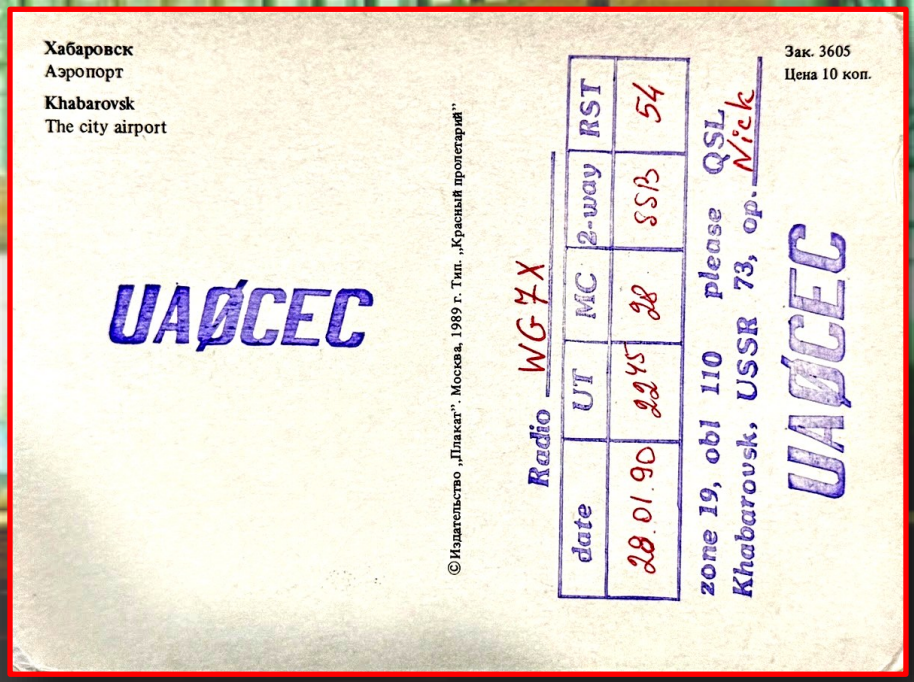
Cold War Soviet Era QSL Cards





Another cool card—this time from Khabarovsk, USSR from 1990 featuring the city airport. As is common in cards from this era and from the Soviet Union, the card itself was made for another purpose and a rubber stamp turns it into a QSL card. But many hams around the world make them this way to this day.

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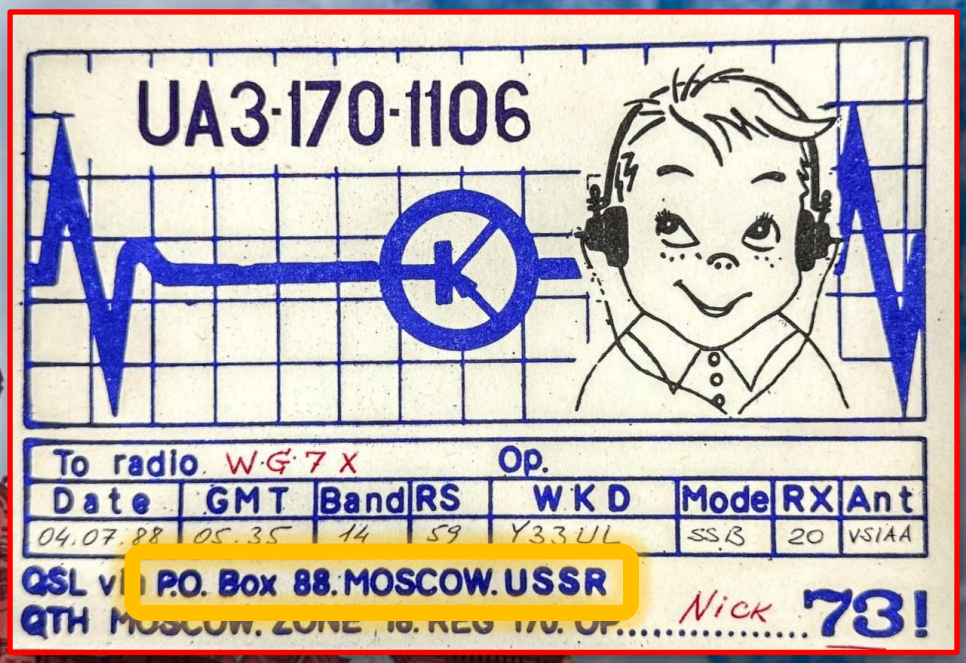
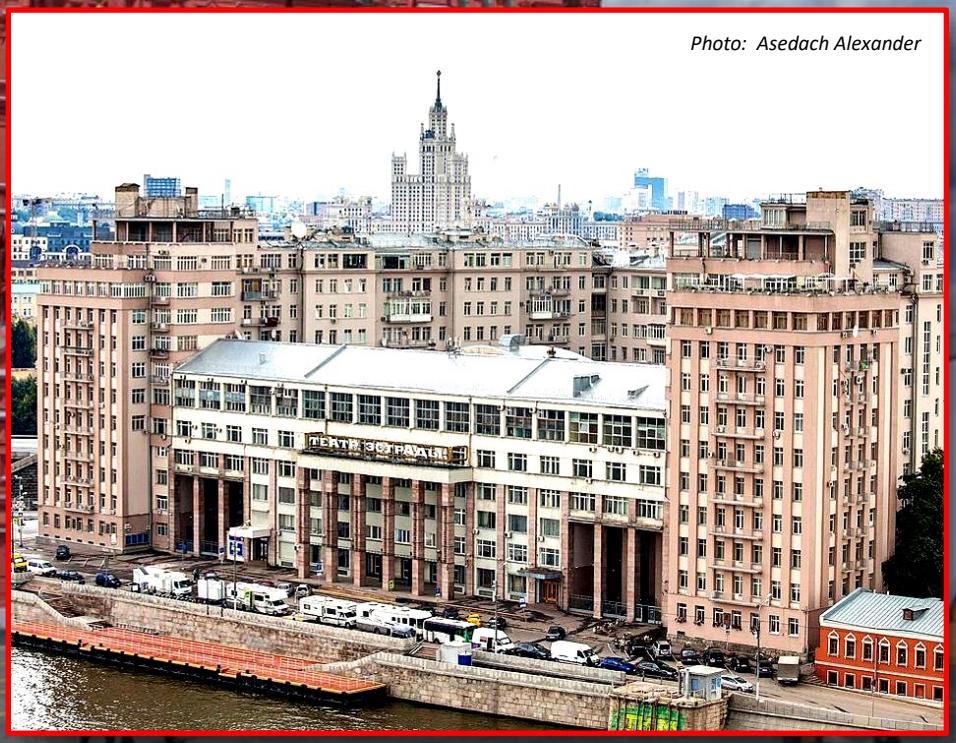
email loggersbark@gmail.com

Cold War Soviet Era QSL Cards

Classis USSR SWL QSL card from 1988 and the peak of the cold war. PO Box 88 was located in the House of Government, Moscow, Russia (below right). Anyone wishing to be a ham radio operator had to register as an SWL for a period of several months before being allowed to apply for a transmitting license. Amateur radio activity in the Soviet system was not a "hobby" as it was in the West but a state-supervised technical discipline overseen by DOSAFF (the Voluntary Society for Assistance to the Army, Aviation, and Navy). Just like in most other countries, a technical test and Morse proficiency test were required to be passed before being allowed to transmit on the air. And all such transmissions were regularly monitored by the Soviet government to ensure no classified information was being transmitted abroad.

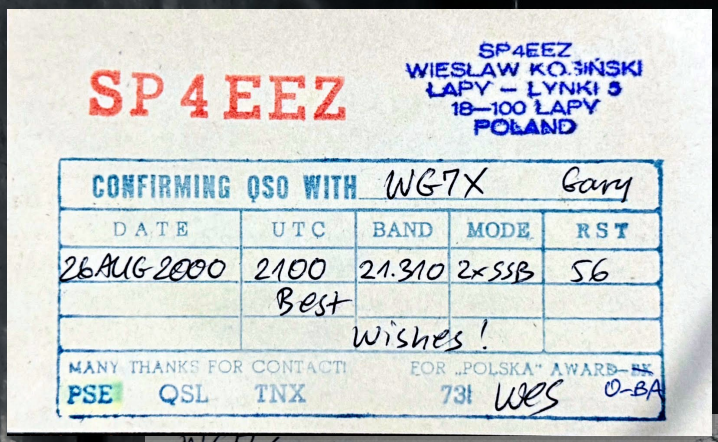

UA3-170-1106
To radio W G 7 X Op.
Date GMT Band RS WKD Mode RX Ant
04.07.88 05.35 14 59 Y33UL SSB 20 VSIAA
QSL via P.O. Box 88. MOSCOW. USSR
QTH MOSCOW. ZONE 16. REG 170. OP.....
Nick 73!



Cold War Soviet Era QSL Cards

Many times, QSL cards were made with whatever materials were at hand. Cereal box paper, promotional postcards, advertisements with a blank side—whatever could be had. In the case of these two cards, the one on top (not from the Cold War era but certainly created in 2000 by a ham who had lived through it), Wieslaw Kozinski, who later became SP4Z, and for years has been active with the WRTC. The QSL is made on a discarded computer programming punch card, using rubber stamps for the informational side.

The card on the bottom from RWØAW (SK) was made on what appears to be perhaps paper from a facial tissue box or similar material. (The A vs. W denotes he got a license upgrade to a higher class). But this is innate to the "ham radio operator condition" - no matter where we live. Hams have a long history of making do, and finding ways to do things on a tighter budget whenever possible. In fact, in my Novice days I made 100% of my cards by hand, in very similar ways, using discarded manila file folders and rubber stamps. It's just a part of being a ham.

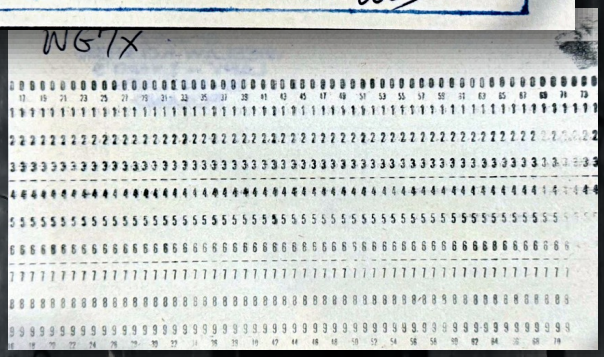

SP 4 EEZ

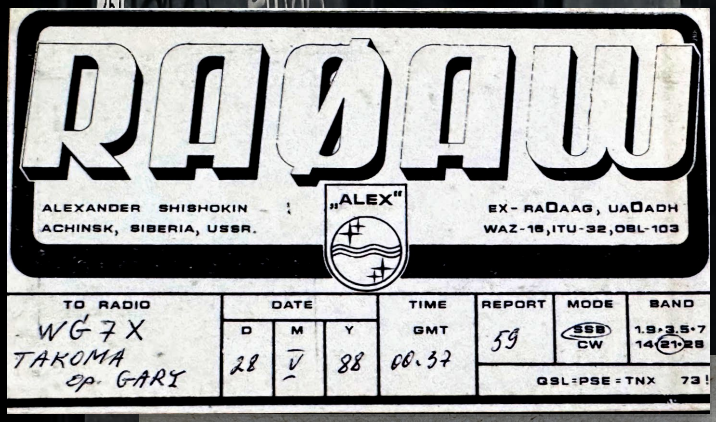
SP4EEZ
WIESLAW KOZIŃSKI
ŁAPY – ŁYNKI 5
18–100 ŁAPY
POLAND

CONFIRMING QSO WITH WG7X Gary

DATE	UTC	BAND	MODE	RST
26AUG2000	2100	21.310	2xSSB	56
	Best			
	Wishes!			

MANY THANKS FOR CONTACT! FOR „POLSKA" AWARD
PSE QSL TNX 73! WES O-BA

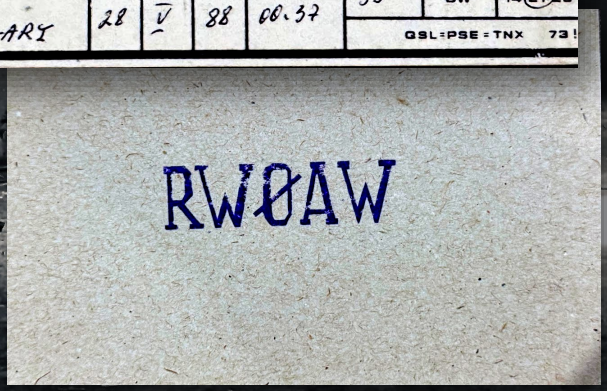



RAØAW

ALEXANDER SHISHOKIN
ACHINSK, SIBERIA, USSR.
"ALEX"
EX- RAØAAG, UAØADH
WAZ-16,ITU-32,OBL-103

TO RADIO	DATE D	M	Y	TIME GMT	REPORT	MODE	BAND
WG7X TAKOMA op. GARY	28	V	88	00.37	59	SSB CW	1.9·3.5·7 14·21·28

QSL=PSE=TNX 73!


RWØAW

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Cold War Soviet Era QSL Cards

Thanks to Gary WG7X for sharing his many beautiful and memorable QSL cards spanning many years! Far too many to feature here one at a time, but by all means meet up with him at the clubhouse one sunny Saturday and ask if he can bring them in next time to show around.

For now, 73! Dave W7UUU

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email loggersbark@gmail.com

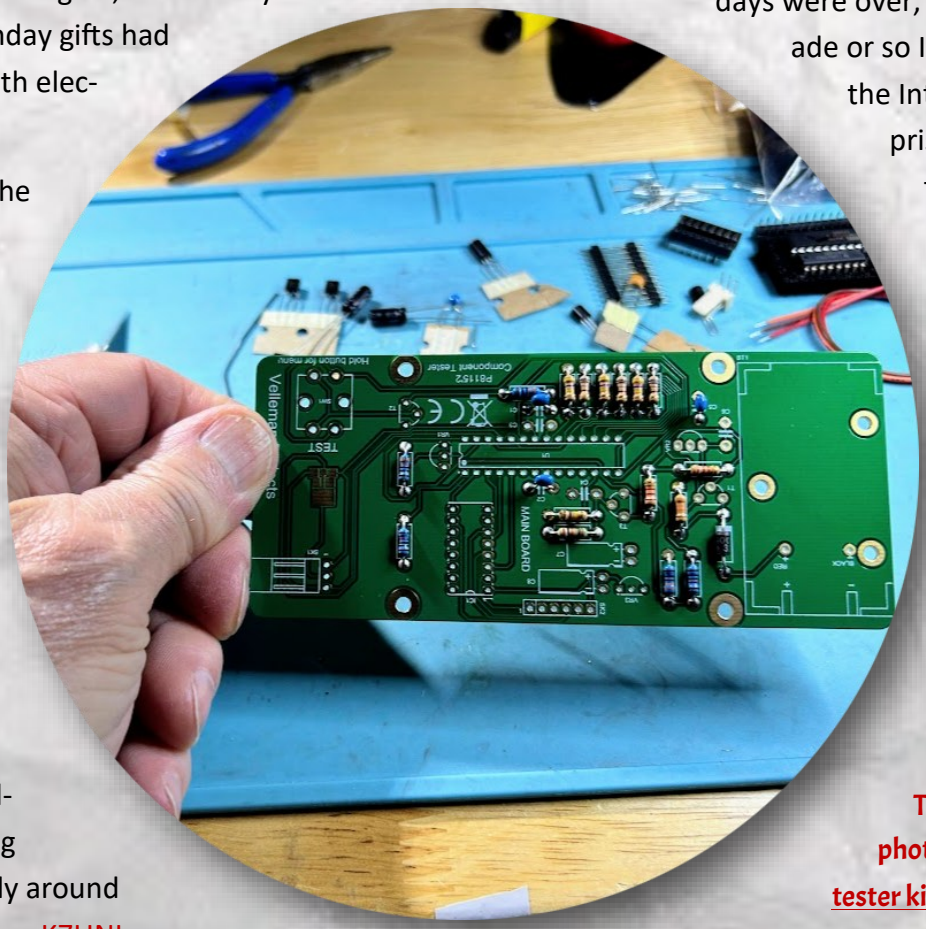
Homebrew & Kits corner

REVISITING THE MAGIC

PROJECT PROFILE

By Al N7OMS

Like many hams, I was interested in the hobby at a young age. Then life intervened, and I didn't get active again until my forties. Something else I have in common with many hams is that my father was my mentor. As you can imagine, most of my Christmas and birthday gifts had something to do with electronics.



I don't remember the exact year, but I do remember the hours I spent assembling my first major kit — the Heathkit EK-2 receiver. It was an educational kit that explained how each stage of a radio worked. Heathkit was a well-known name among hams, and especially around our house. My father, K7UNL, was a big Heathkit fan. He built our color TV and even the home organ — which, of course, meant his son had to take organ lessons. But that's a story for another time.

The important part was that his station featured a Heathkit model SB-301 and SB-401. They're still part of my ham radio collection, and I hope one day to restore and realign both of those pieces.

Kit building is part of my DNA, and I'm glad for it. There was a time when I thought my kit-building days were over, but in the last decade or so I've discovered that the Internet offers a surprising variety of kits to build. While my chances of ever assembling another Heathkit have diminished, I can still enjoy the simple pleasure of stuffing boards and watching the solder flow.

The accompanying photos show a component tester kit I built recently. It was from WHADDA, a company with a nice selection of projects. So don't despair — kits are still out there for all kinds of projects and skill levels. Equip yourself with some good-quality tools, fire up that soldering iron, and enjoy hours of building fun.

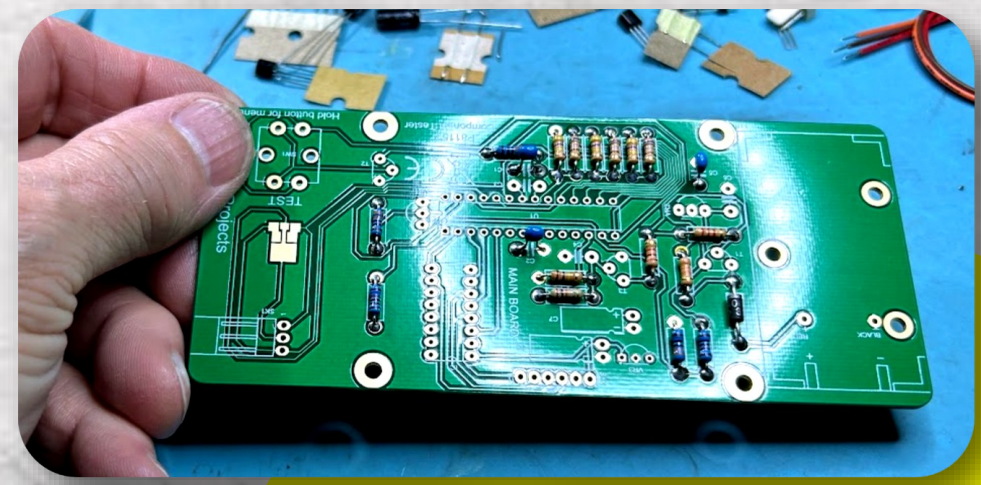
-Al N7OMS

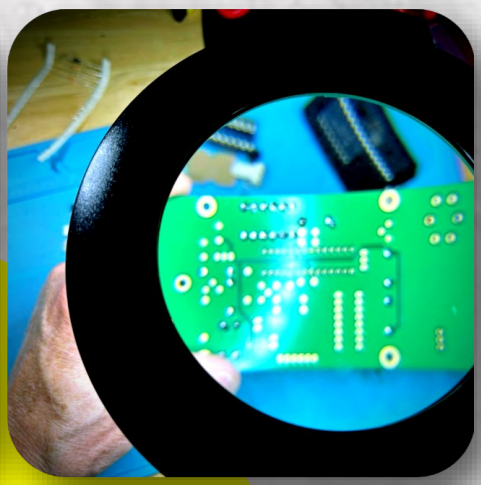
Homebrew & Kits corner

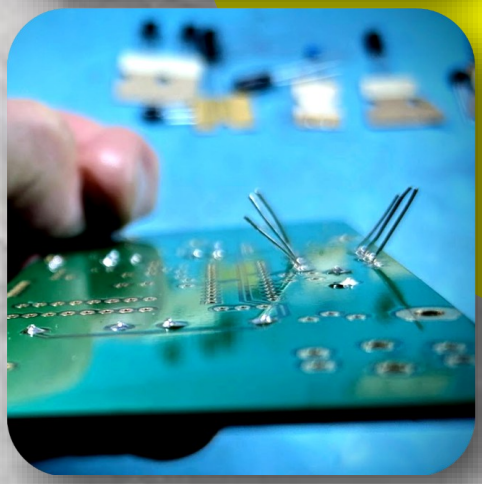
REVISITING THE MAGIC

PROJECT PROFILE

By Al N7OMS







Photos by Al N7OMS

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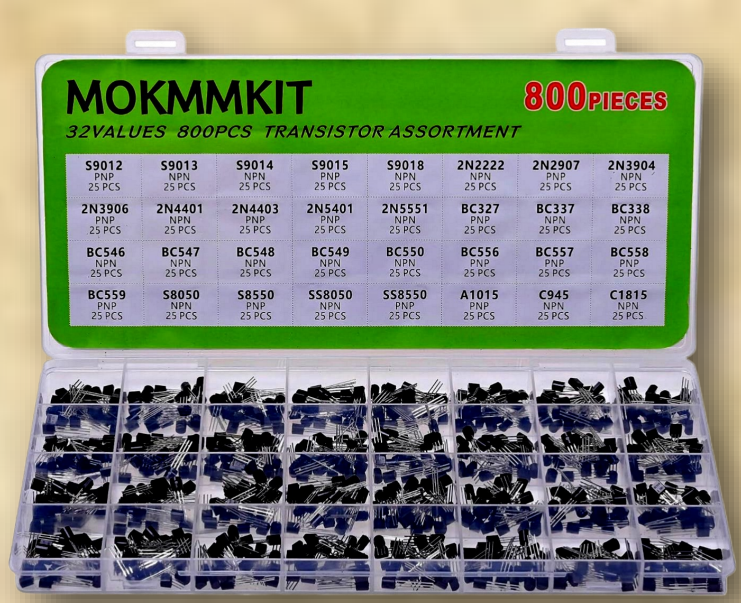
I was recently hacking a small circuit together for a relay controller and needed an NPN transistor—a 2N2222 would be fine—anything really. It was just for a simple switching circuit. Then I remembered having bought this 800-piece transistor assortment that was on my parts shelf. There's something satisfying about having a well-stocked selection of basic semiconductors, ready for any little project or repair that comes along. But ordering from Digikey or Mouser can get pretty spendy if ordering piece by piece. For the frugal ham who doesn't want to spend a fortune buying individual transistors in dribs and drabs, this 32-type, 800-piece transistor assortment kit is a gem. It covers nearly every common general-purpose NPN and PNP transistor type you're likely to encounter in small-signal radio or audio circuits. From the old standby 2N2222 (which was perfect for my need) and 2N3904 to their complementary partners like the 2N2907 and 2N3906, the mix also includes popular BC-series devices, C1815s, S8050s, and others that will feel right at home in almost any schematic from the 1960s through today.



MOKMMKIT 800-piece NPN/PNP transistor assortment from Amazon that sells for $14.99 or less than 2 cents per unit. Click to view on Amazon (no affiliation)

Every transistor in this set comes in the familiar TO-92 case, perfect for breadboards, perfboard layouts, and low-power stages in transmitters, receivers, and test gear. The kit includes 25 of each type, neatly labeled in compartments, so you won't waste time rummaging through a coffee can full of mystery parts (and the associated testing time trying to identify what you find). With 800 total pieces, it's enough to last for *years* of tinkering and troubleshooting.

What makes this assortment especially appealing is its value. Buying even a handful of these devices separately would cost several times more than the entire kit price, and you'd still be missing key complementary types. At the current Amazon price of $14.99, that works out to less than 2 cents per transistor. Whether you're restoring a Heathkit, building a simple code oscillator, cobbling together a mic preamp, or like me, just need an NPN or PNP for a project on the bench, this is a great kit to have on hand.

It's the kind of practical, inexpensive purchase that pays off every time you sit down at the bench. So here you go, my Frugal Ham friends—a modest investment for a small mountain of transistors—and the quiet confidence that you've got the right parts on hand when inspiration or need strikes.

-Dave W7UUU

And now that you've stocked up on transistors, it's a great time to pick up the BOJACK 24 Value 630 pcs Aluminum Electrolytic Capacitor Assortment Box Kit (0.1 µF – 1000 µF) to round out your workbench without breaking your budget. And yes, I also have this very assortment in my parts stash. Think of it this way: you've got your NPNs and PNPs ready in the TO-92 package — now the caps are the perfect compliment for coupling, bypassing, filtering, and power-supply smoothing in your ham-radio or general electronics builds.

This BOJACK kit covers 24 different capacitance values from 0.1 µF up to 1000 µF, with multiple voltage ratings (10 V, 16 V, 25 V, 50 V) for a total of 630 pieces in the set. They are all radial lead caps (wires coming out the bottom).

From small signal decoupling to time-constant duties in a test gizmo or oscillator, you'll probably find a value you need. The parts arrive in a neatly labelled plastic storage box so you aren't rummaging in a drawer full of loose caps when you have a schematic in front of you.

So once again, for the frugal ham who wants to build, repair and experiment without constantly ordering single capacitors, this is exactly the kind of kit you want to have on hand. The transistor kit on the prior page gives you the active devices; this cap kit gives you the capacitive side of the passive support components. Together they form the core of many simple circuits — from audio amps to VFOs, to low-voltage power supplies or other circuits. When you're dealing with coupling capacitors between stages or smoothing a 12-V supply rail down to the filament voltage, having the right cap on-hand saves time and money—just like with the transistors, ordering onesie twosie from Digikey or Mouser will cost a lot more that this whole kit. It's just a smart move to have a box like this on your parts shelf—even if you only need one or two a year—you will have them on hand when you need them, and not have to rummage in the junkbox hoping to find a cap that will work in your circuit. A great frugal ham idea!

BOJACK 24-value 630 piece assortment of electrolytic caps from Amazon that sells for $16.99 or less than 3 cents per unit. Click to view on Amazon (no affiliation)

-Dave W7UUU

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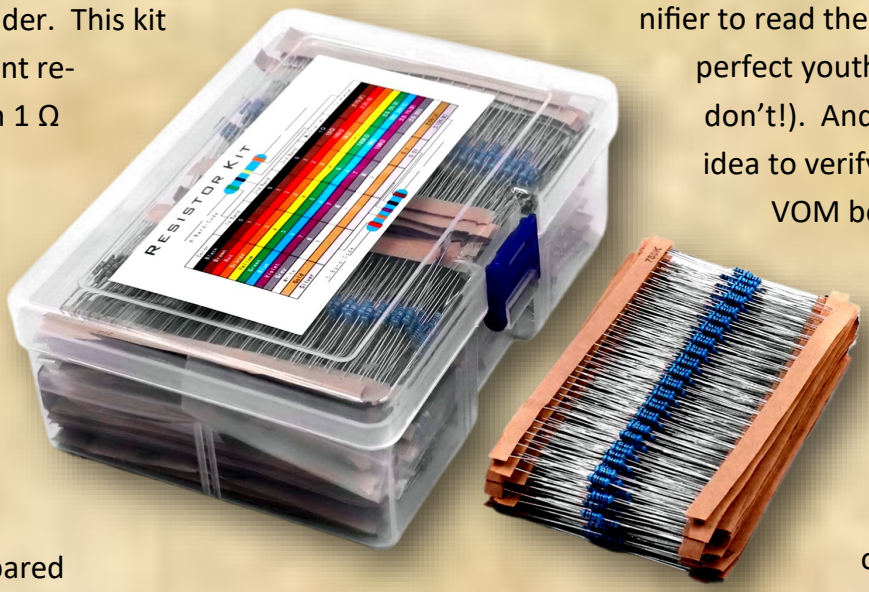
Now that you've got your transistors stocked, and you've rounded out your parts stash with a solid electrolytic capacitor assortment, it's time to throw some resistors into the mix. Meet the 2600 pcs 130 Values Resistor Kit — a budget-friendly workbench essential for the frugal ham radio builder. This kit gives you 130 different resistance values (from 1 Ω up to 3M Ω) and 20 pieces of each, for a total of 2,600 resistors.



MelkTemn 2600 piece 1/4W resistor assortment for only $18.99 which is dirt cheap compared to Mouser etc. Click to view on Amazon (no affiliation)

Alongside your stocked transistors and capacitors, having this resistor set means you'll be prepared for almost any coupling, biasing or voltage-dividing task your circuit needs. Whether you're building a QRP transmitter, a small homebrew direct-conversion receiver, or a bench oscillator, you've now got the active devices (transistors), the smoothing and coupling components (caps), and the passive control elements (resistors) all covered.

I will say that one of the drawbacks to most resistor assortments—and this one in particular— is they tend to come in paper reels, with the values vaguely stamped on the paper strip. This does make them harder to work with and sort to find the value you need. Not to mention the color stripes on resistors these days aren't like the old carbon-composite days, with thick bright easy-to-read color codes. You very likely will need a loupe or magnifier to read them (unless you have perfect youthful eyes, which I don't!). And it's always a good idea to verify the value with a VOM before installing it in the circuit.

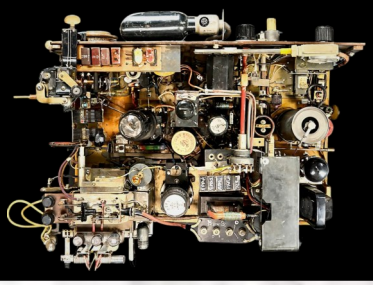
Still – for the price, the value of this resistor kit is hard to beat. Having a well-organized storage box of resistors means fewer trips online searching for whatever specific value you need when your schematic is staring back at you. Combine the resistor kit with your transistor and capacitor kits and you're well on your way to a fully-equipped parts stash without blowing your budget. As with the other two parts categories in this Frugal Ham series, you will save a ton of money over onesie twosie purchases from the online parts houses.

-Dave W7UUU

Steampunk RADIO

By Dave W7UUU

Steampunk RADIO



All photos by Dave W7UUU

SOMETIME BACK IN JULY A LARGE ASSORTMENT

of estate gear arrived at the W7DK clubhouse. Most of it was the typical lifetime ephemera collection of a typical ham of "a previous generation". But one of the items caught the eye of the Property Management Team, who put it aside for me to come take a look at before it was stripped down for parts to sell or use for club projects.

I never expected to see what I was presented with: a truly steampunk bread-board style homebrew transmitter-receiver combination that was utterly amazing to look at. Immediately I knew it was something special, and not just some failed project or assortment of random parts.

Upon closer examination, I realized it was complete, and an enormous amount of painstaking care had been taken in its construction. I was further surprised to discover it came with a thick envelope filled with copious construction notes, block diagrams, and even a complete schematic diagram.

As I was looking the rig over, I recognized this was something pretty special and worthy of not only a Logger's Bark article, but also of a video to at least show it off, if not demonstrate it in actual operation.

So with permission of the PMT, I took it home for a more thorough examination and documentation. By early September, I had a suitable block of time to set up a fairly elaborate photo and video session with the radio so that I might fully document its construction.

Upon closer examination, I realized that there was a considerable amount of age damage to the wiring in places, and at least for the time being, decided against taking the steps to power it up and test for operation. Perhaps that can come later. For now, I just wanted to capture the crazy beauty of its construction—something you just don't see every day, especially in typical estate gear donations.

Despite its chaotic complexity, it's really a pretty simple 2-tube regen receiver and a 2-tube CW transmitter, running about 2-3 watts output on the 40m band. There are 5 crystals at 5 KHz spacing, from 7035 to 7055 KC, a total of roughly 20-25 KC of transmitter range. The receiver is variometer tuned, with trimmer caps (hidden below the tuning coil area) for band-set. This works great, since the coverage need only be that which the transmitter is capable of. Due to lots of cracked insulation and frayed wires, I decided not to try powering it up just yet—at least not at this juncture. Perhaps in the future. But regardless, it stands as a really fun and amazing homebrew project that becomes artwork just sitting on the table, even if it's never powered on.

What follows is merely a photographic documentation of the inner works of the radio, as well as a description of some of its functions. I've also made scans of the key documentation for your viewing. Any of the block diagrams or schematics you'll find in this article are linked to full-size zoomable versions. Simply right click > "open in new tab" to be taken to my Google Photos folder. You may then view and zoom the images to get a greater understanding of what this amazing steampunk radio is all about. **MANY details are revealed in the YouTube link right here**

Dave W7UUU

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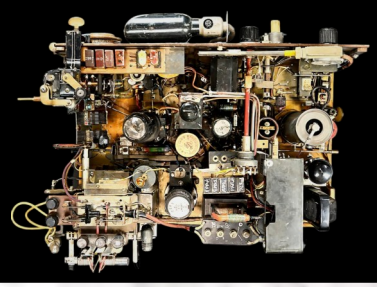
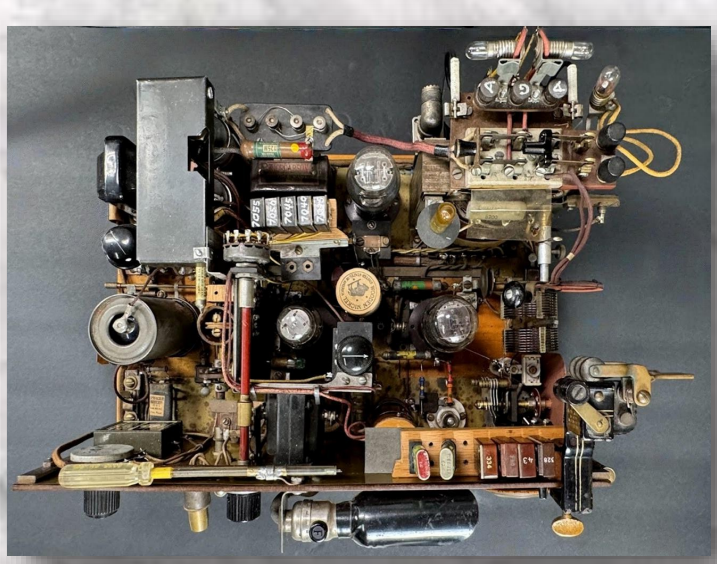
Steampunk RADIO

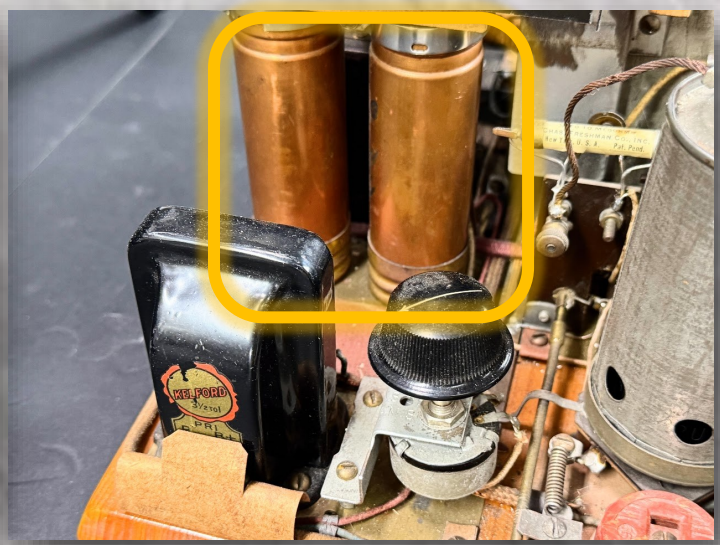




Overview of the chassis, looking straight down. Scroll to the last page of this article for a detailed label view of all of the key parts

Receiver tuning is via a homebrew slug-tuned variometer rather than a variable capacitor

The wooden nickel is a humorous addition, serving no other function than fun. It's affixed to the RF output grid coil for the transmitter



The 20 uF 450vDC filter capacitors are housed inside custom-brazed copper tube canisters

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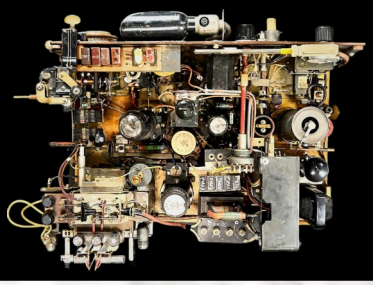
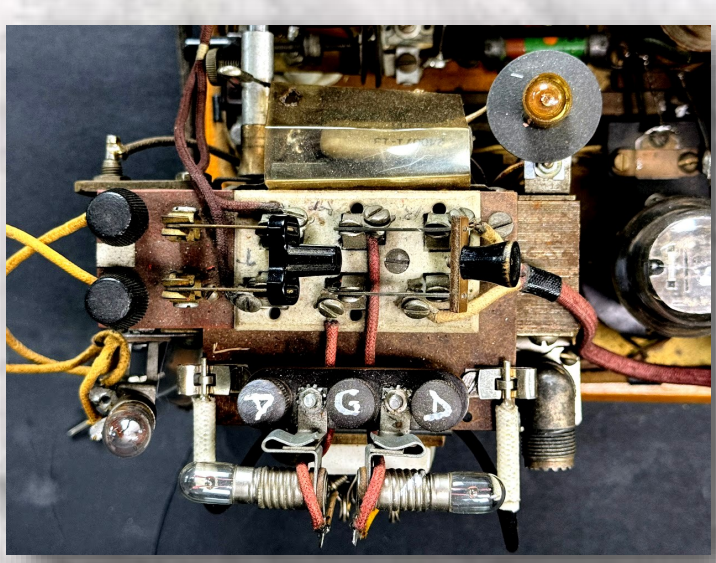
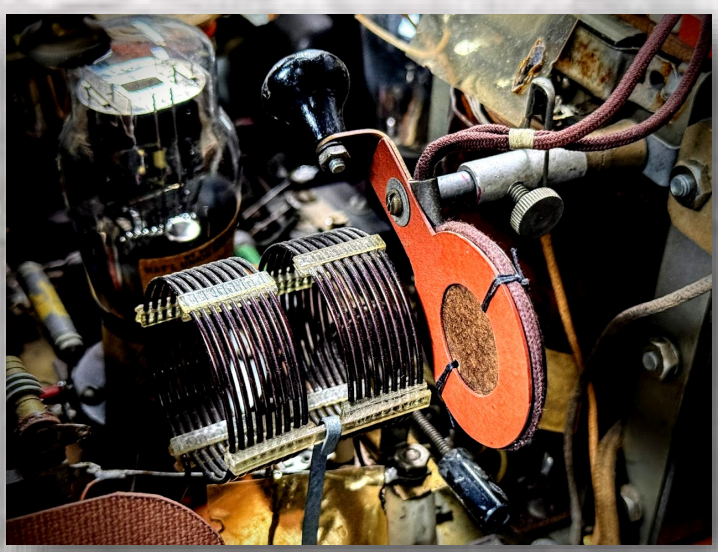
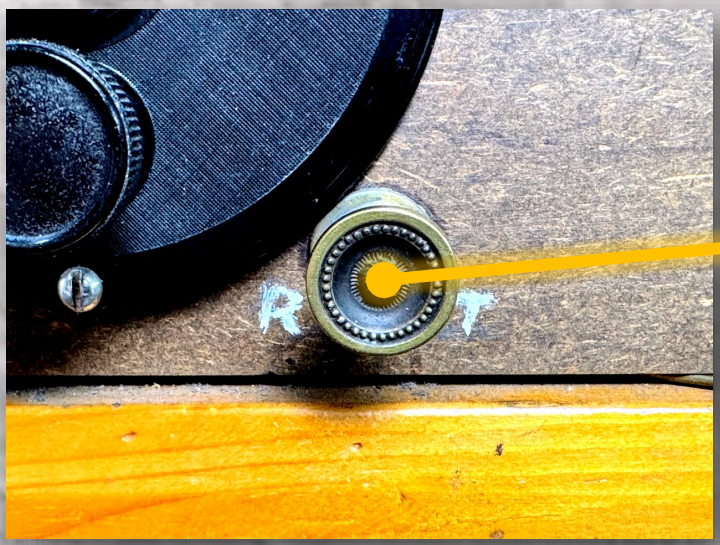




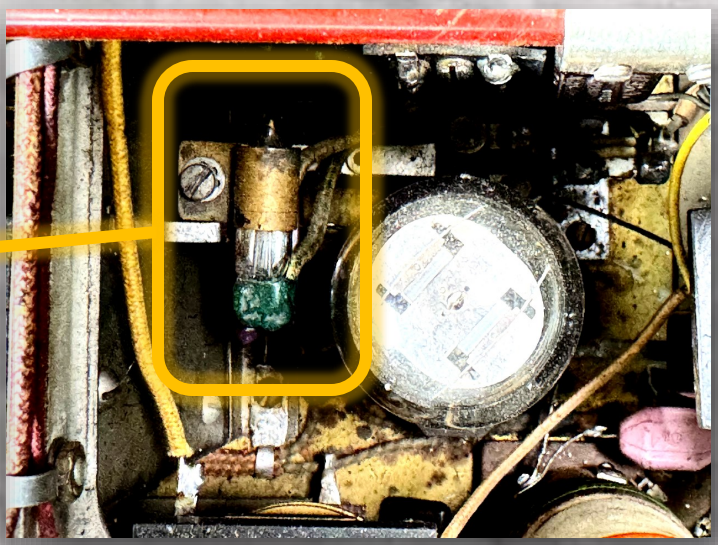
Three knife switches (two on top, one in front below the orange wires out of view) allow for several antenna configurations to be used



The tank coil for 40 meters is link coupled, and the red coupling loop is manually adjusted to peak the RF output into the antenna



Just below the main tuning dial is the R / T switch, or "Transmit Receive" which uses a linear shaft to shift from transmit to receive. It also turns a mercury switch, which is not used.



The Mercury switch (activated by turning the TR switch) was intended as a "Spotting" function. But the wiring doesn't appear complete. This is explained in detail in the YouTube video linked below.

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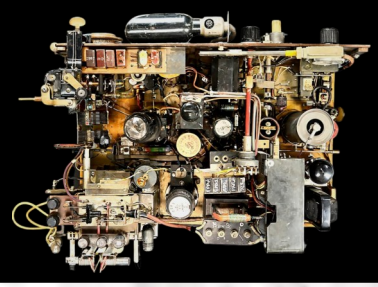
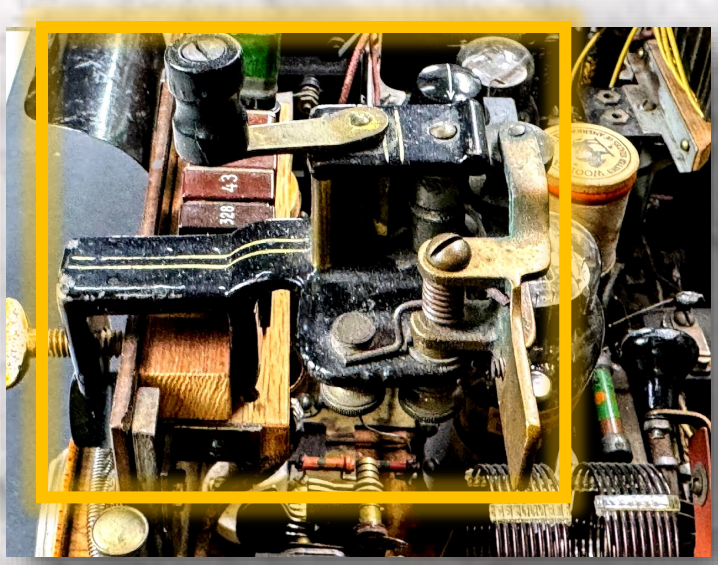
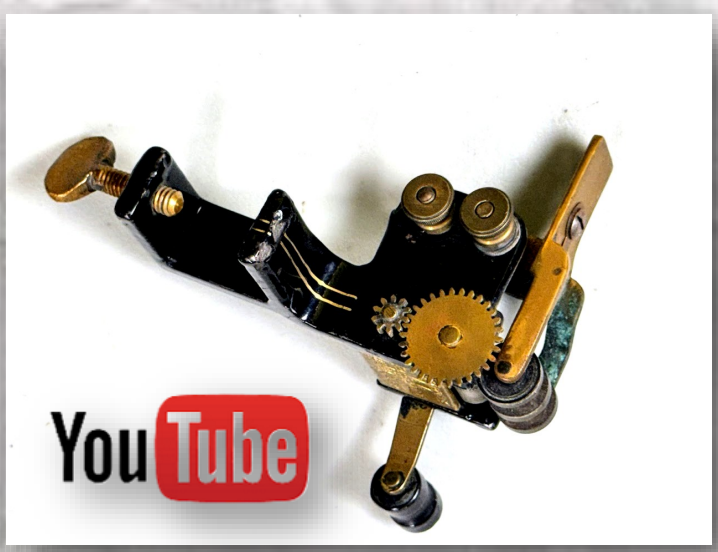
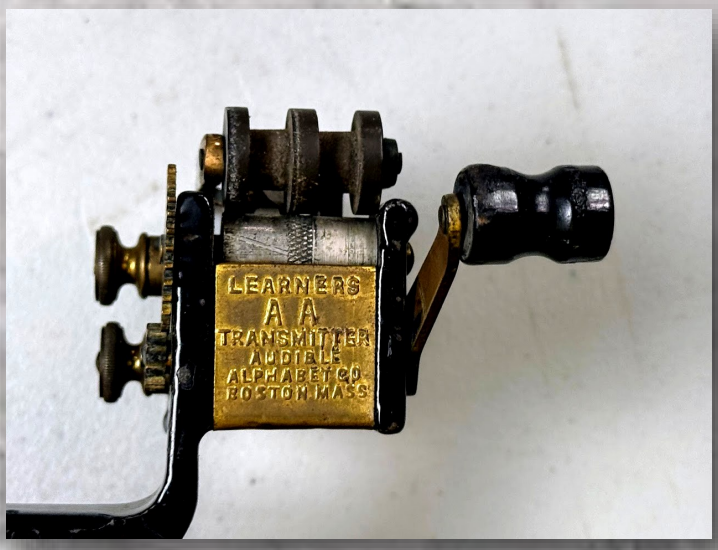




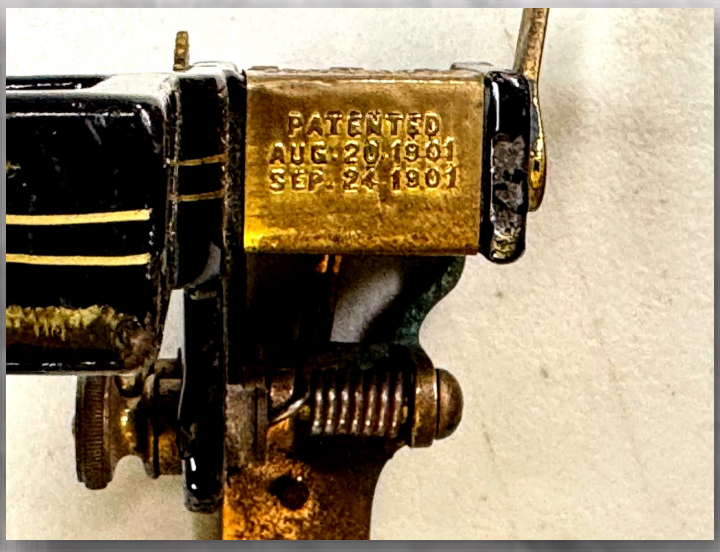
Nestled at the top right of the radio (as viewed from the front) is the Learners AA Morse Code tape reader and crank assembly



Here is an isolated view of the assembly as easily removed from the radio showing the key components—watch the video for more



Closeup of the name plaque, which reads "Learners AA Transmitter, Audible Alphabet Co. Boston, Mass"



On the other side are stamped the patent dates of August 20, 1901 and September 24, 1901

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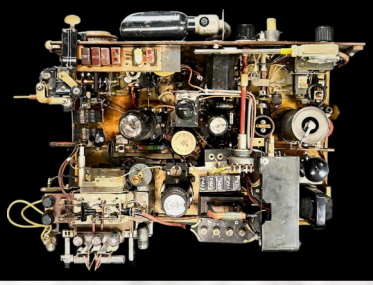
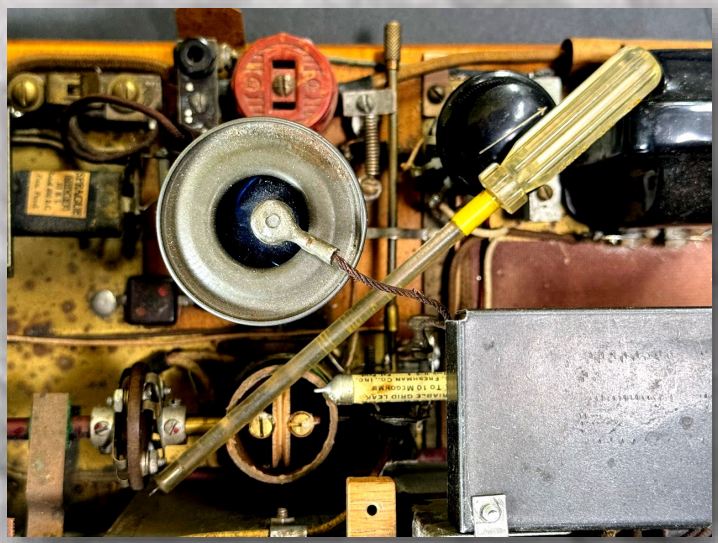


Mid-20th century mechanical clock in homemade wooden frame & mounting

Rearview of the clock, showing time tracking adjustment and winder key



Semi-homebrew insulated screwdriver for adjusting the receiver trimmers and tuning slugs

1940s era mechanical pencil for filling in QSL cards, placed in brazed brass holder

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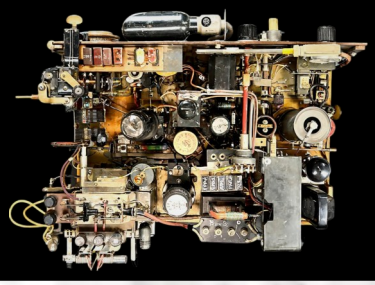
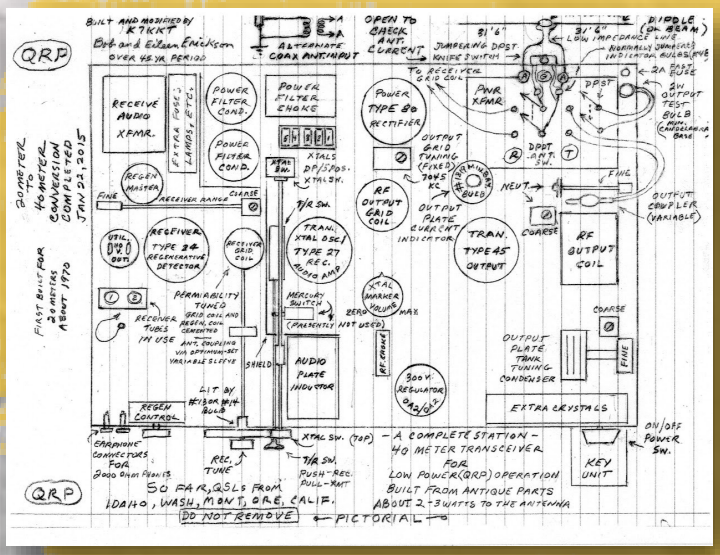
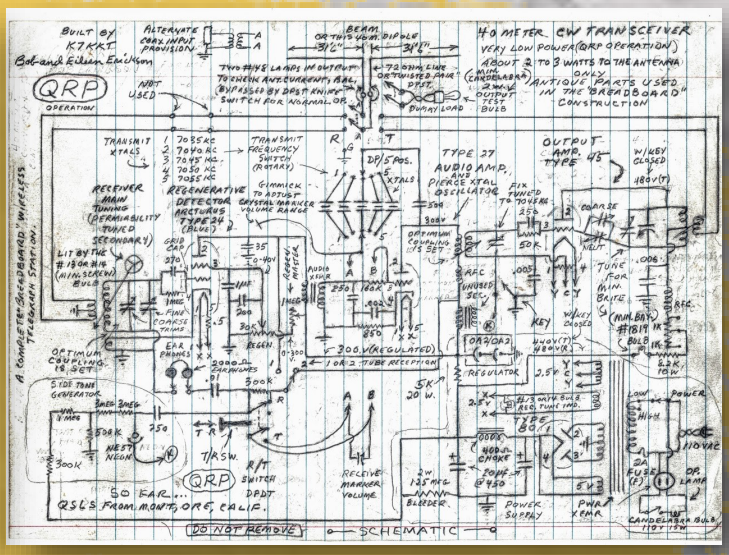


Above: *To see a 10-minute video tour of the chassis, and see some of the interesting functions, click the YouTube link above. There are MANY technical details in the video—please—WATCH IT.*

Below: *To view the block diagram or the schematics diagram of the radio click the images below. (Accuracy not verified)*





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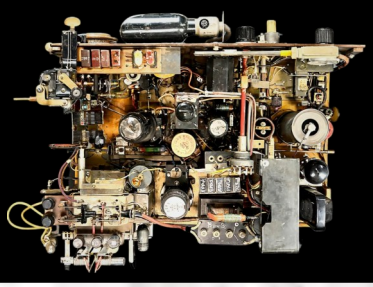

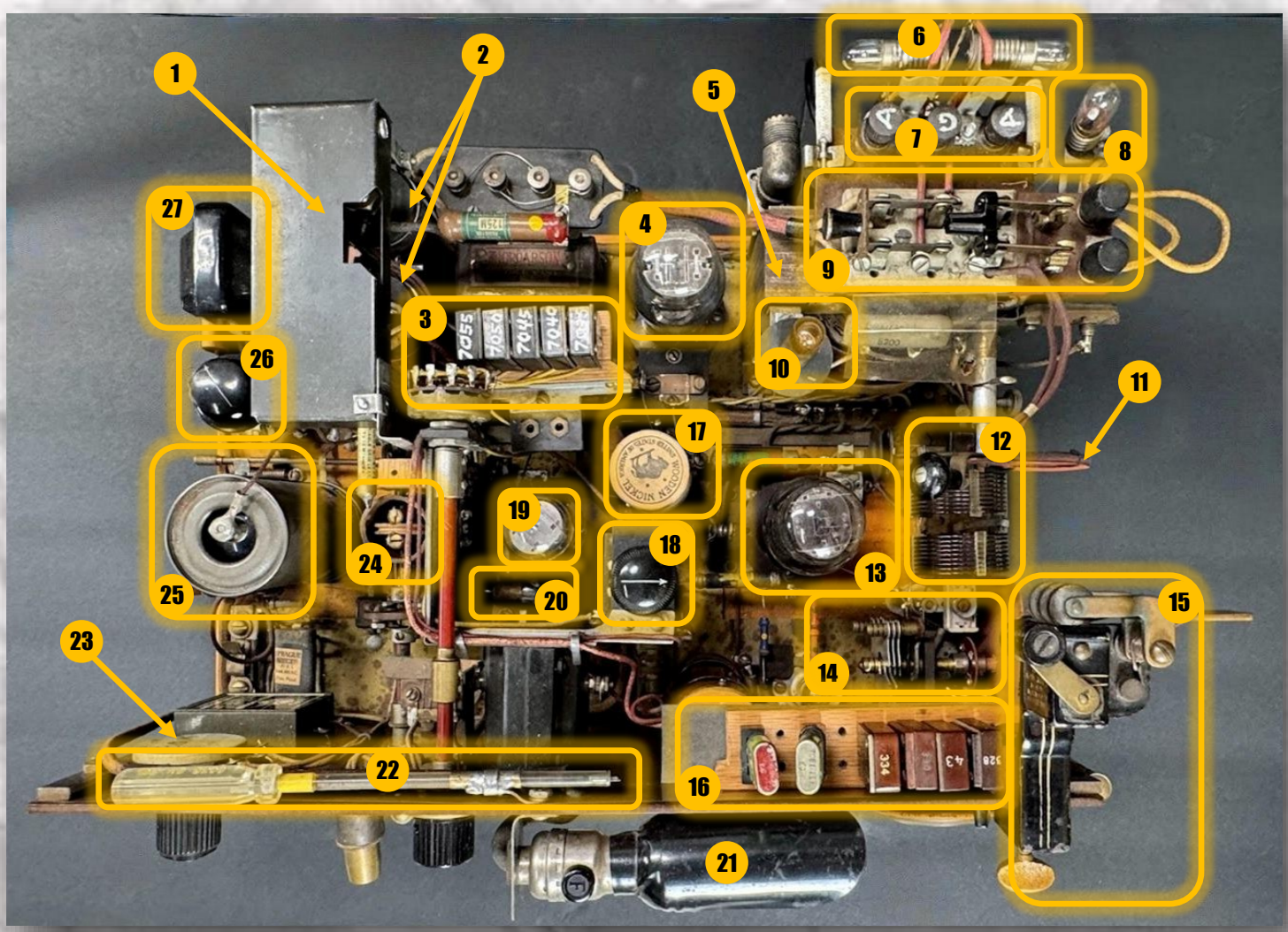

1	"Extra Fuses, Lamps, etc."	15	Morse CW CQ Tape Mechanism
2	Power Filter Capacitors in custom cans	16	Spare Crystals
3	5 Primary crystals and switch	17	RF Output Grid Coil (Under Wooden Nickel)
4	Type 80 Rectifier Tube	18	XTAL Marker Volume
5	Power Transformer	19	Type 27 Receive Audio / XMTR XTAL Oscillator
6	Balanced Antenna RF Indicators	20	Mercury Switch
7	Balanced Antenna & Ground Connection	21	Reading Lamp on Front of Radio
8	RF Dummy Load	22	Screwdriver to Adjust Receiver Grid Coils (#24)
9	Balanced / Unbalanced Antenna Switch	23	Regeneration Control
10	Plate Output Indicator	24	Receiver Grid Coils in Variometer Configura-
11	RF Tank Circuit Link Coil	25	Type 24 Receiver Regenerative Detector
12	40m RF Tank Coil	26	Receiver Regeneration "Master"
13	Type 45 RF Output Tube	27	Receiver Audio Transformer
14	Plate Tuning Capacitor		

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AMATEUR RADIO, AS WE ALL KNOW, WAS BORN in the era of Morse code, and demonstrating proficiency in Morse was part of the hobby from the very beginning. In the U.S., that requirement began to erode with the introduction of the no-code Technician provisions in 1991, and the Morse exam was finally eliminated for all license classes effective February 23, 2007.

Over that roughly 100-year span, many hams not only proved their proficiency but embraced the magic of communicating via Morse with like-minded operators around the world.

In the early days, straight keys were the norm, but hams quickly adopted the telegrapher's "speed keys," and by the 1920s, semi-automatic mechanical keys — "bugs," popularized by Horace G. Martin's Vibroplex (patented in 1904 and first sold in 1905) — were soon part of the ham community.

Bugs, however, have their limitations. They can generate dits automatically (enough to produce perhaps 5–8 dits per push, depending on the mechanism and adjustment), but the dah side remains manual, so the operator still needs to time the dashes to match the dot speed. Many operators mastered that art, but others longed for a way to automate both dits and dahs.

Beginning in the early 1940s, electronic keyer projects began appearing in amateur publications — for example, Harry Beecher's April 1940 QST article on "Electronic Keying" — and hams were quick to experiment with and adopt tube-based keyer designs through the late 1940s and 1950s.

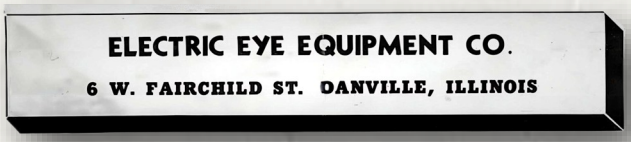
1st commercial keyer: Mon-Key—1948
Photo: Telegraphkeys.com

The first known commercial electronic tube keyer was the Mon-Key, sold by the Electric Eye Company of Danville, Illinois, in 1948. It wasn't long before other manufacturers got on board with ever-improving models. Early examples had the keying paddle built in, but before long paddles became a separate item and an industry unto themselves.

This article isn't intended to be a concise chronological history of electronic keyers, but simply a showcase of some of my favorite models that I've collected over the years. Honestly, there are more keyers (and paddles) that have been made over the decades than could likely ever be fully "collected" by a typical ham. But what follows are some of those I've come across that, in turn, came home with me.

—Dave W7UUU

1st commercial keyer: Mon-Key—1948
Photo: Telegraphkeys.com



As far as I was able to determine the Mon-Key was the first commercially-sold electronic keyer. It used an electronic multivibrator oscillator (V1 12AU7) with adjustable resistor banks in an RC network to create the dits and dahs. Speed was controlled by a multi-position rotary switch that selected different resistors which varied the timing of the RC circuit. The single potentiometer, R7, controlled volume to the internal monitor speaker. Keying was accomplished by a relay switched by one half of V2 (also a 12AU7). The relay then fed out to the transmitter. One important feature: the circuit design causes one side of the AC mains to the key arm and contacts of the built-in paddle. If the AC plug is plugged in *reversed*, the hot side of the 120v mains will appear on the key! So if you ever find one of these, be aware of this safety concern. ■ *-editor*

Eldico EE-2 ca. 1950
Photo: Dave W7UUU

I bought this key many years ago for a few bucks at the Mike & Key Hamfest in Puyallup, Washington. It was labeled "homebrew keyer" and it certainly appeared to be as advertised. I liked how the key paddle was nicely tucked inside, protruding just enough through the front panel for good ergonomical use. I later learned however this is another very early electronic key, the model EE-2 made by Eldico Electronics (who manufactured transmitters, receivers, and other amateur radio products). It's a pretty similar design to the Mon-Key but with continuously variable speed instead of the stepped speed control. ■ *-editor*

Homebrew keyers have always been an item I've sought at ham fairs. I admire the building skills of hams in the past, to create useful devices for their shacks with their own two hands. Above is a homebrew design similar to the Eldico. Top right a much more sophisticated design, that uses a 6AS7 keying tube instead of a relay. The paddle is from an Eldico but with improved paddles. To the right is my own homebrew dual-12AU7 keyer I built many years ago, using a mercury-whetted relay for output. This was one of the survivors of my 2020 shack fire but needs a thorough going-through to get it back into operation and ready to be paired with a rig. ■ *-editor*

Photos from the collection of Dave W7UUU

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email loggersbark@gmail.com

Heathkit HD-10 Keyer with internal paddle
There are numerous rear-panel connection options
From the collection of Dave W7UUU

Heath Company entered the keyer market in 1965 with the HD-10 as their first automatic Morse keyer. It was fully solid state using 11 transistors and 7 diodes, making it the first solid-state Morse keyer on the market. The dots and dashes are self-completing unlike most earlier keyers. The built-in paddle is pretty primitive—simply a lever that trips a pair of microswitches—one for dits and one for dahs. There is very little adjustment—crude at best—and at speeds above 20 WPM it is pretty flaky in use. However, you can use any external paddle by simply wiring to screw terminals on the rear panel, bypassing the internal paddle. There's also a hand-key input option that keys the "keying transistor" for adding hand-sent code to your setup. Speed range could be configured via component changes during construction to be either 10-20 WPM or 15-60. There is an adjustable "dot space" control inset into the speed potentiometer as a set-and-forge adjustment for keying ratio. Despite its quirks, the HD-10 is an icon of early keyers and a lot of fun to use on the air. ■ -*editor*

Heathkit HD-1410 Keyer with internal paddle
From the collection of Dave W7UUU

The HD-10 reigned supreme in the Heathkit lineup for almost 10 years, but in 1975 was replaced with the HD-1410. This model not only provided self-completing dots and dashes but also provided iambic operation. The internal paddle mechanism is an improvement, but they did away with external paddle connection (an easy mod to make however). The HD-1410 also offered dual speed ranges (determined by a single resistor, R9, on the main PC board)—10 to 35 or 10 to 60 WPM. Users could also simply change the paddle to left-hand operation. As with the HD-10, keying output was solid-state so care must be taken not to exceed switching voltages present at the transmitter. Another nicety of the HD-1410 was an input for receiver audio, and a headphone jack. With this feature, users could have one set of headphones, and monitor both their keying as well as hear receiver audio. This is still a popular keyer to this day, and is very often found at hamfests for very reasonable prices. ■ -*editor*

Heathkit HD-8999 UltraPro Keyboard Keyer
Discolored as a result of my 2020 shack fire
From the collection of Dave W7UUU

This is the SA-5010 that was Terry Perdue K8TP's "engineer's build" - I bought it from him a couple of years ago and he autographed it for me. Photos by Dave W7UUU

Both of the keyers on this page were designed by "One of the Hams at Heath", Terry Purdue K8TP, who has become a local friend in the Seattle area. On the left is the HD-8999 UltraPro microprocessor based keyboard keyer that was very popular and lots of fun to use . Based on a custom 3870 CPU, this keyer could do just about anything you would want a keyer to do, all centered on a pre-built keyboard from the Heath Co. Zenith Computers division. Many folks mistake the HD-8999 in shack photos as a Commodore 64 but the lack of the 64's four function buttons on the right is the giveaway. There are far too many features to list in this paragraph—just suffice to say, it covers it all—contesting, code practice, memories, and much more. The firmware was hard-coded into the CPU chip itself, making the HD-8999 3870 processor truly "unobtanium" - a generic 3870 won't have the program to run the keyer so when these are gone, they are gone for good. ■ *-editor*

This is the SA-5010 capacitive touch microprocessor controlled keyer that debuted in 1981. As with the HD-8999, the SA-5010 offers a LOT of features: code practice, memories, and all possible parameters can be customized. It's the kind of device that outside of the basic features, you really want to keep the manual on hand. One very unique feature is the aluminum paddles are removable and store in a slot under the front edge of the keyer—which also explains why so many SA-5010 keyers at hamfests are missing the paddles. As with most capacitive touch keyers, the SA-5010 can get glitchy—damp fingers, super dry fingers, or using the keyer for practice if not plugged into a transmitter for a ground connection. There are adjustments on the bottom to help with these issues. All in all, it's a good keyer—as this type of keyer goes. They were quite popular and turn up often at hamfests. ■ *-editor*

Another one I found at the Yakima hamfest last year that came with a cool custom wooden base!

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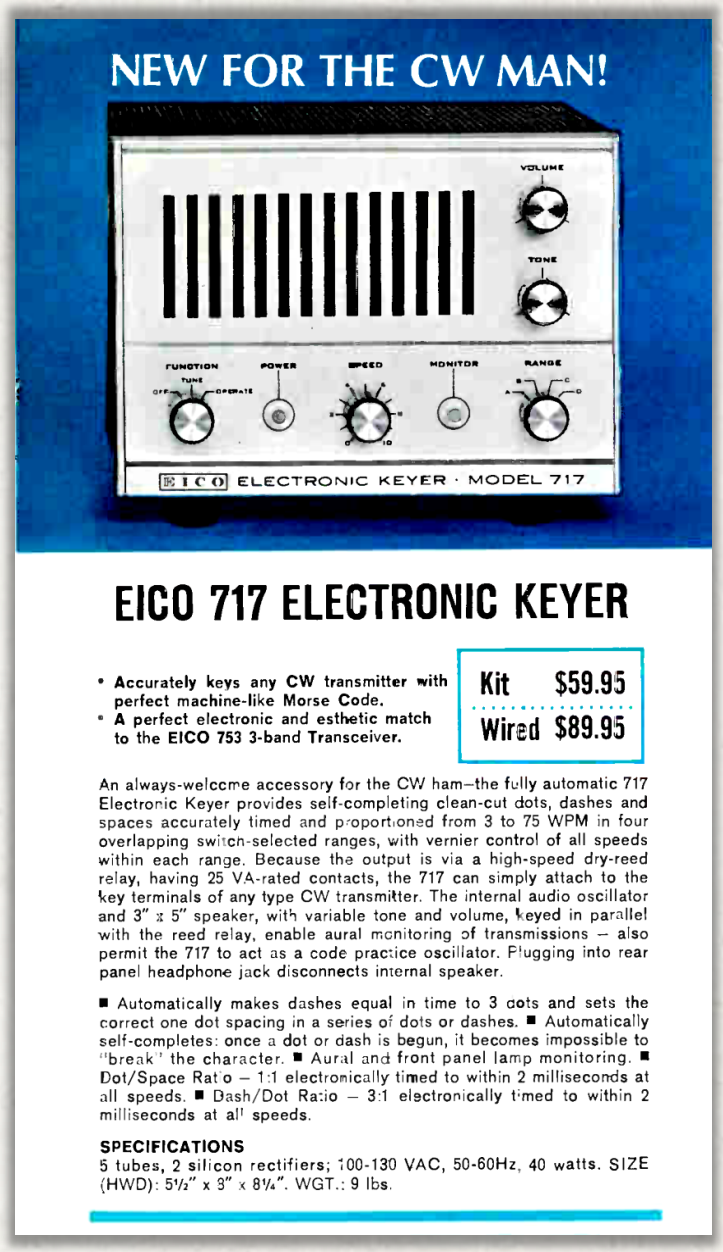
Eico 717 keyer with Vibroplex paddle
From the collection of Dave W7UUU


NEW FOR THE CW MAN!
VOLUME
TONE
FUNCTION
POWER
SPEED
MONITOR
RANGE
EICO ELECTRONIC KEYER · MODEL 717
EICO 717 ELECTRONIC KEYER
• Accurately keys any CW transmitter with perfect machine-like Morse Code.
• A perfect electronic and esthetic match to the EICO 753 3-band Transceiver.
Kit $59.95
Wired $89.95
An always-welcome accessory for the CW ham—the fully automatic 717 Electronic Keyer provides self-completing clean-cut dots, dashes and spaces accurately timed and proportioned from 3 to 75 WPM in four overlapping switch-selected ranges, with vernier control of all speeds within each range. Because the output is via a high-speed dry-reed relay, having 25 VA-rated contacts, the 717 can simply attach to the key terminals of any type CW transmitter. The internal audio oscillator and 3" x 5" speaker, with variable tone and volume, keyed in parallel with the reed relay, enable aural monitoring of transmissions — also permit the 717 to act as a code practice oscillator. Plugging into rear panel headphone jack disconnects internal speaker.
■ Automatically makes dashes equal in time to 3 dots and sets the correct one dot spacing in a series of dots or dashes. ■ Automatically self-completes: once a dot or dash is begun, it becomes impossible to "break" the character. ■ Aural and front panel lamp monitoring. ■ Dot/Space Ratio — 1:1 electronically timed to within 2 milliseconds at all speeds. ■ Dash/Dot Ratio — 3:1 electronically timed to within 2 milliseconds at all speeds.
SPECIFICATIONS
5 tubes, 2 silicon rectifiers; 100-130 VAC, 50-60Hz, 40 watts. SIZE (HWD): 5½" x 3" x 8¼". WGT.: 9 lbs.

The Electronic Instrument Company, known as EICO, of Flushing, New York was a major B-list player in amateur radio in the early to mid 1960s. Their IC-753 SSB/CW transceiver was one of the most popular entry-level rigs of its day, despite its reputation for being drifty. As a companion to the 753, in 1966 they introduced the beautifully-styled model 717 electronic keyer. This was a 6-tube model, covering 3 to 75 WPM code speed with a reed relay for fast keying (without using an expensive mercury whetted relay like other brands did at the time). Having a relay output also meant it could key just about any transmitter out there. And like other higher-end keyers, unlike the Hallicrafters HA-1 and others, it had self-completing dots, dashes and spaces, which made sending a breeze. The almost-retro looking brushed aluminum cabinet was styled to match the EICO 753 transmitter but it looks great paired with just about any transmitter of that era. It's one of my favorite keyers of all time, and despite being large (8.5" x 8.5" x 5.5" deep), I always manage to find a spot for it with one of my rigs.

-Dave W7UUU

K.E. Electronics SQ-AUTO and MEMO-512 keyers
From the collection of Dave W7UUU

K.E. Electronics was a small cottage manufacturer in Franklin Lakes, New Jersey. They made primarily Morse code keyers for hams. Their most basic model was the SQ-AUTO (top) that was introduced in January 1975. It featured an easily-adjusted built-in paddle with self-completing dots and dashes. Of course it was all solid-state chip-based and had circuitry for very clean signal shaping. It sold for $49.95 postpaid.

The K.E. MEMO-512 came out later that same year, and offered two banks of 256 bits each. Each bank could store ~23-28 characters. These two memories were for the purpose of sending contest CQ calls and such. The price for the MEMO-512 was $89.95. They were good keyers and many sold, but the company faded out by the early 1980s. My only complaint is they are very light and like to slide around in operation. ■ *-editor*

MFJ-422B Pacesetter keyer—piggyback on a Bencher BY-1
From the collection of Dave W7UUU

The MFJ-422 Pacesetter keyer bridges a gap no other keyer manufacturer ever tried. The keyer itself is the aluminum box you see atop the Bencher BY-1 paddle. In this combination, it was sold as the MFJ-422B to get the Bencher paddle, or the MFJ-422BX to get the MFJ-564 paddle (inset). Should you already own one of these paddles, you'd order the MFJ-422EX. The keyer attaches to the paddle with just a single setscrew.

As for the keyer specs, it's very basic. 5-65 WPM with adjustable dot/dash ratio, and variable sidetone pitch. Dots and dashes are self-completing. It can also be used in semi-automatic mode like a bug if you like. The keying output is solid state, so you have to be careful with some older rigs that might have high voltages on the key input. But it can key most direct (modern) rigs and grid-blocked rigs (many early Novice-style transmitters). It is an iambic keyer and supports either A or B mode (selectable with an internal jumper). One cool feature is it can run on a 9v battery, making it good for portable use. But if desired you can run it off a 12v external power supply (it uses a mini-TS plug—the MFJ wall wart is an MFJ-1312D but any 12vDC supply will work if you solder on the right connector). This keyer was on the market for many years—mid-1980s right up until the demise of MFJ. ■ *-editor*

MFJ-464 Keyer / Reader
From the collection of Dave W7UUU

Logikey Model K-5 Keyer
From the collection of Dave W7UUU

The MFJ-464 is a fairly sophisticated keyer in that it offers a PS2-style computer keyboard connection for use as a keying input. There was a time when I liked using a keyboard for keying so I got to know the 464 over 10 years ago. It's a nice keyer—with some quirks. I also like the 4 buttons on the front to trigger contest messages. Every function is quickly accessible via a simple front-panel menu system so it's easy to change speed or pitch or numerous other parameters. But it falls down in its ability to handle "/" characters. It's out of the scope of this paragraph—just suffice to say, if you operate needing a "/" you will have issues. Other than that, it has been a nice keyer although I don't use it much these days. For contesting, I use the function keys in N3FJP software now instead, or the buttons built into my Icom or Yaesu radios. Note that the MFJ-464 also bills itself as a "CW reader". I have never tried that function—I consider "readers" a waste of time and don't remotely recommend them. ■ *-editor*

The Logikey Model K-5 is another piece in my quest years ago for "push-button contest keying". The K-5 came out around 2011 sold by Idiom Press at a price point of $150. It was an upgrade to the earlier 4-button Model K-3 but offered 6 active messages (pushbutton triggered) and 12 total (two banks) for a total of 1530 characters. The programming offered many complex niceties, like looping and nesting of messages, auto-sending of contest serial numbers (0 to 9999), and keying speeds from 5 to 60 with a single "big knob" to set the speed on the fly. They also sold an external pushbutton bar to remote the buttons to near your radio which was very handy. Although discontinued, the K-5 is still a popular keyer today given its reasonable price on the used market and extremely advanced programming system. But as with the MFJ-464, I no longer use pushbutton keyers (outside of the radio itself) so I really don't use this model any longer. ■ *-editor*

This is the AEA Conester CK-2 keyer from the early 1980s. It's a memory keyer largely aimed at the contesting market, with ten programmable messages that can be sent "at the touch of a button". It includes an automatic serial number generator for contests that call for sequential numbers for every QSO you make. There's also a programmable repeat mode so that the "CQ TEST DE W7UUU" message can resend over and over during the event. And of course, there's a full-featured keyer function as well, for normal sending. Speeds are selectable, as is the monitor tone and the dot-dash ratios. As with some other keyers of the 1980s, for bug operators, there is an option to run off the automatic dahs and use it in semi-automatic mode to simulate using a bug.

But I never used it much. The programming of AEA keyers is cryptic and in my opinion, downright bizarre and far from intuitive. I know some folks love them, but I have never been a fan.

These two keyers are just fun basic models that I've picked up over the years at hamfests—just for a few bucks each. I bet a lot of hams never knew that Daiwa made a keyer! It supports iambic keying (which I don't use anyway) and can run on an internal 9v battery. It's very much like the MFJ-422 in that regard. It also features the weight control on the front, which for certain applications can be handy.

The MFJ-401B is about as basic as you can get—again, much like the MFJ-422 but less fancy. It runs on a 9v battery or external power and offers iambic keying just like the model 422.

And as with so many other keyers of the early-to-mid 1980s, supports semi-automatic operation for bug users.
■ *-editor*

Photos from the collection of Dave W7UUU

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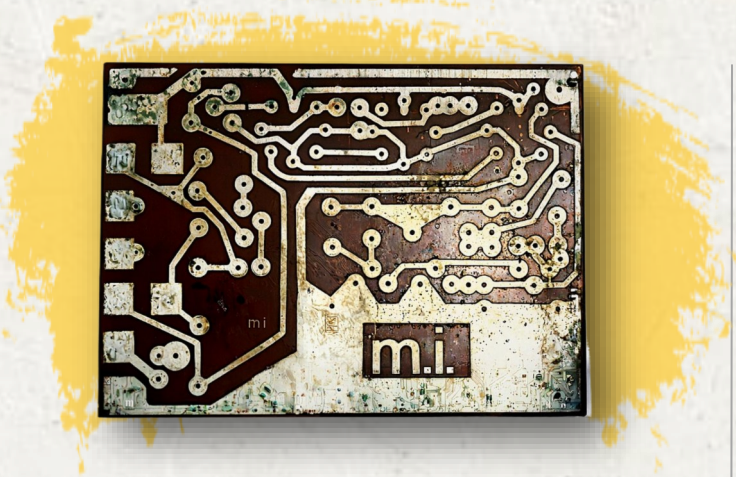


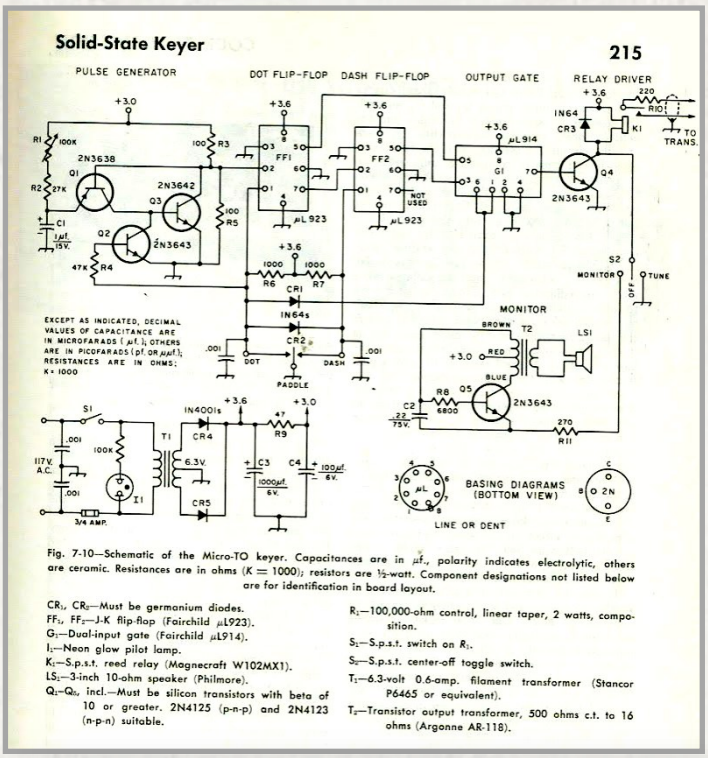
The final keyer featured in this article is unique, in that it's a solid state version of the Hallicrafters HA-1 "T.O." keyer that is featured in the W7OS Museum column this month. In fact, it's a slight improvement, in that unlike the HA-1, this keyer has a dot and dash memory, making it much less fussy to operate on the air. It's called the MicroTO in honor of the famous Hallicrafters HA-1 "T.O." keyer named for its inventor K9TO.

The PC board you see was designed by club member Randy WB4SPB many years ago. It's based on the May 1967 QST article by Chet Opal, K3CUW (later reprinted in the 1970 ARRL Handbook). Randy made and sold these boards in his youth in Georgia, and they were a popular hamfest item. The "M.I" designation is for the name Randy and his friends gave their cottage business.

The circuit is very simple—however, not so easy to duplicate today as the Fairchild µL923 JK Flip-Flop and µL914 Dual-Input gate RTL chips are long ago discontinued and unobtainable. But if you really want to build one, modern TTL or CMOS chips could easily be sourced to provide the same functions. But you're on your own for the PC board—Randy stopped making them a very long time ago!

I hope you enjoyed this romp through my keyer collection—there are many dozens more I never touched on. But they're out there if you want to seek them out for your own collection.

-Dave W7UUU


Solid-State Keyer 215

PULSE GENERATOR DOT FLIP-FLOP DASH FLIP-FLOP OUTPUT GATE RELAY DRIVER

EXCEPT AS INDICATED, DECIMAL VALUES OF CAPACITANCE ARE IN MICROFARADS (µf.); OTHERS ARE IN PICOFARADS (pf OR µµf.); RESISTANCES ARE IN OHMS; K = 1000

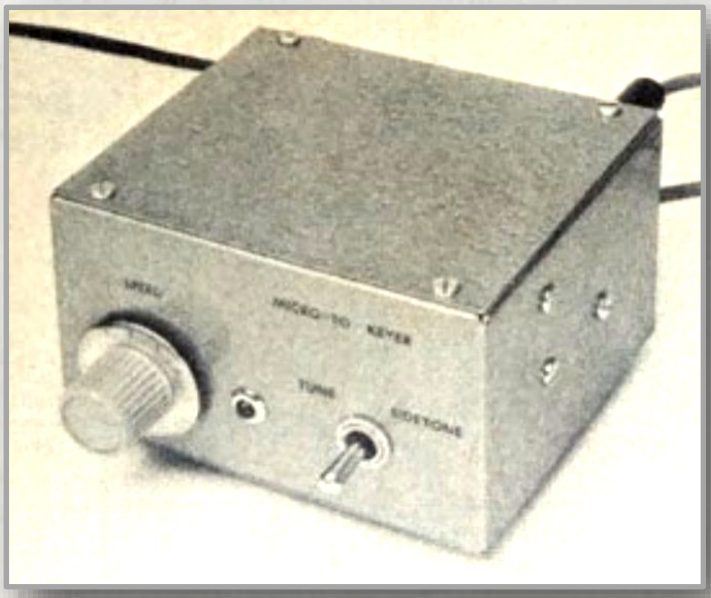
MONITOR

BASING DIAGRAMS (BOTTOM VIEW)

LINE OR DENT

Fig. 7-10—Schematic of the Micro-TO keyer. Capacitances are in µf., polarity indicates electrolytic, others are ceramic. Resistances are in ohms (K = 1000); resistors are ½-watt. Component designations not listed below are for identification in board layout.

CR1, CR2—Must be germanium diodes.
FF1, FF2—J-K flip-flop (Fairchild µL923).
G1—Dual-input gate (Fairchild µL914).
I1—Neon glow pilot lamp.
K1—S.p.s.t. reed relay (Magnecraft W102MX1).
LS1—3-inch 10-ohm speaker (Philmore).
Q1–Q5, incl.—Must be silicon transistors with beta of 10 or greater. 2N4125 (p-n-p) and 2N4123 (n-p-n) suitable.
R1—100,000-ohm control, linear taper, 2 watts, composition.
S1—S.p.s.t. switch on R1.
S2—S.p.s.t. center-off toggle switch.
T1—6.3-volt 0.6-amp. filament transformer (Stancor P6465 or equivalent).
T2—Transistor output transformer, 500 ohms c.t. to 16 ohms (Argonne AR-118).



MicroTO keyer as designed by Chet Opal K3CUW in 1967.
Click either image to go to the August 1967 QST, page 17.

Schematic and image © ARRL, Inc.

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SHERLOCK INVESTIGATES:

HIGH NOON RADIO FAILURE

A MOST CURIOUS

AFFAIR WITH THE PRC319 TRANSCEIVER

SHERLOCK

HIGH NOON Radio Failure—A Most Curious Case

By Dave W7UUU

SHERLOCK INVESTIGATES HIGH NOON RADIO FAILURE:
A MOST CURIOUS AFFAIR WITH
THE PRC-319 TRANSCEIVER

"My name is Sherlock Holmes. It is my business to know what other people do not know."
-S.H.

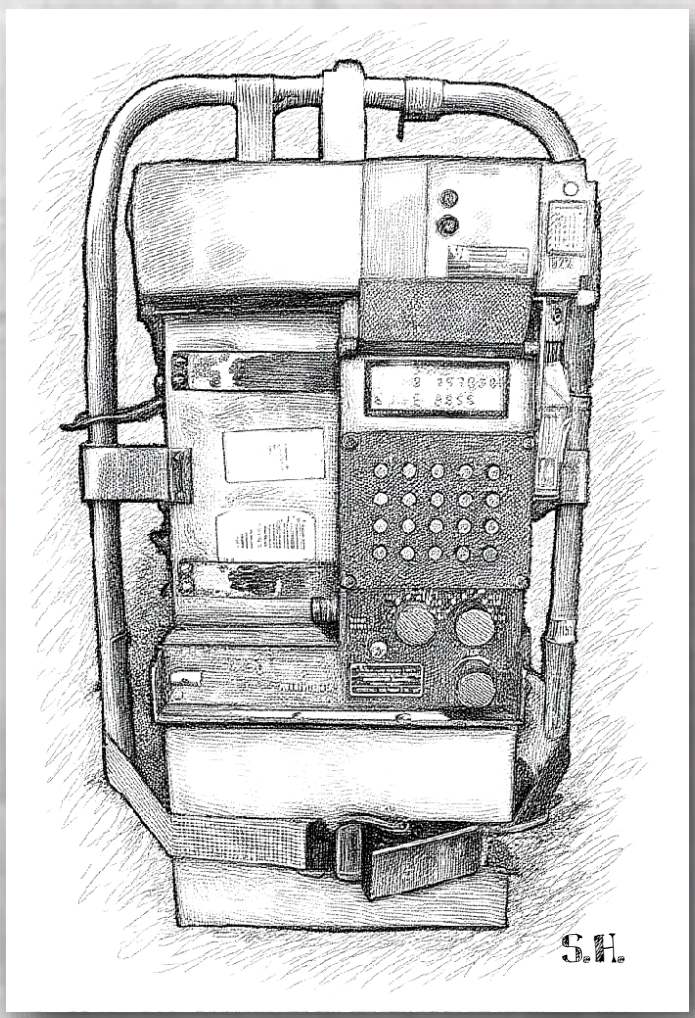
(*The Adventure of the Blue Carbuncle)*

It was upon a dark and lowering afternoon that a defective PRC319 field radio was returned to the Signal Stores at headquarters for examination. The apparatus had come from Iraq, and the accompanying report was distressingly brief. The equipment, it appeared, had become what soldiers term a "Hangar Queen"—a reference, I am told, to Howard Hughes's immense H-4 Hercules, that monstrous flying-boat of birch construction which, despite its eight engines and 320-foot span, lifted into the air but once before being consigned forever to its hangar.

My faithful companion, Dr. Watson, was detained upon medical duties and could not attend me, so this account is drawn solely from my own notes. I trust they may be of service to others who encounter a failure of such singular nature.

The set was delivered to me at Whitehall by my brother Mycroft, whose position within the corridors of government is, as ever, both obscure and formidable. The instrument lay within a plastic shroud, a strip of mine-tape affixed to it bearing the message: "The operator was on HP (High Power) when the receiver audio first began to distort. The Iraq environment was very hot." As always, my investigation began with duplication of the fault.

"You know my method. It is founded upon the observation of trifles."
(The Boscombe Valley Mystery)



My sketch of the stricken PRC-319, committed to paper from recollection alone. It lacks, perhaps, the refinement that Watson's more artistic touch might have lent, yet I trust it conveys the essential character of the instrument.

SHERLOCK

HIGH NOON Radio Failure—A Most Curious Case

By Dave W7UUU

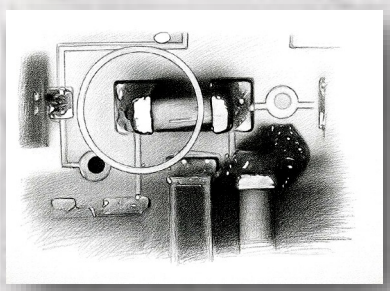
For several hours the apparatus performed flawlessly upon the bench. Only when I removed it to the yard, beneath the full glare of the sun, did the defect emerge. After half an hour of reception upon CHR—Trenton Military's SSB weather broadcast at 15,034 kHz—the voices assumed a peculiar "Donald Duck" timbre, an inverted echo of the original speech. Within the hour the true signal had become indecipherable, the case temperature standing near ninety degrees Fahrenheit.

To appreciate the nature of this disorder, one must know that the PRC319 and its cousin the PRC2000 employ the Weaver, or "third," method of sideband generation. The receiver, being of the direct-conversion type, introduces the incoming audio to a Motorola MC1596 balanced modulator, wherein the upper band from 1.7 to 3.1 kHz is folded upon its mirror image, producing sidebands of opposite phase. Any slight imbalance in that delicate arrangement results not in simple distortion but in a grotesque blending of true and inverted speech—precisely the phenomenon observed.

The behavior proved temperature dependent, increasing with heat and disappearing when the apparatus cooled.

"How often have I said to you that when you have eliminated the impossible, whatever remains, however improbable, must be the truth?"
-S.H.
(The Sign of Four)

Upon opening the cabinet I examined each printed circuit for evidence of mechanical distress. Finding none, I applied measured heat to the various boards and quickly discovered the principal phasing board to be both temperature and pressure sensitive. By the careful use of a probe, I traced the fault to a single tantalum chip capacitor—an orange Sprague component of 2.2 microfarads—whose positive lead had failed intermittently within the solder joint. The connection, in short, was "cold."



My hand-sketch of the errant capacitor, seen here askew within the circle I have inscribed, thus indicating the detached contact

A touch of the iron restored the circuit to perfect health. Subsequent testing at one hundred and thirty degrees Fahrenheit for three hours left no doubt that the malady had been conquered. The transceiver was returned to service the following morning, much to the satisfaction of the Signals Section.

"The game is afoot."
-S.H.
(The Adventure of the Abbey Grange)

As I set down these notes, it occurs to me that even the most complex devices are subject to the same laws of reason and observation that govern men's affairs. Whether one pursues a villain through London's fog or a fault through a tangle of circuitry, the method remains unchanged: observe, deduce, verify, and never surrender to assumption.

-Sherlock Holmes

SHERLOCK—AN EPITAPH

by Guest Contributor, Robert Brock K9OSC

By Dave W7UUU

I received this article recently by a reader of The Bark, *Robert Brock K9OSC who was fascinated by the Sherlock series. The author of these great articles chooses to remain anonymous, but I have full knowledge of his name and call sign. I can assure you the Sherlock articles were not written by me nor by any AI system, but rather by a long-time Extra Class ham here in the U.S. What follows is Robert Brock's commentary on the series. Enjoy! -Dave W7UUU, Editor.*

SHERLOCK HOLMES EPITAPH

by Robert Brock, K9OSC

From July through October, The Logger's Bark published a remarkable series of articles (see references at the end) that enhanced Sherlock's reputation and his clever detective work as applied to radio electronics. Amateur radio was deftly portrayed through episodes familiar to most of us who have faced similar challenges in our own journeys as radio amateurs. Masterfully done, it shows how disciplined detective work can solve radio problems.

Through the eyes of Sherlock Holmes and his companion Dr. John Watson, readers see not only where events unfolded but also the side efforts that led to the resolution of numerous electronic puzzles. Holmes is depicted through his remarkable ability to observe, focus on details, and reason his way to the truth once all impossibilities had been eliminated. These qualities underscore the fascination of Sherlock Holmes.

Known to just about everyone, Sherlock Holmes was the creation of Sir Arthur Conan Doyle, a prolific author who first introduced him in the 1887 novel A Study in Scarlet. That work also brought forth Holmes's ever-present assistant, Dr. John Watson. Following that debut, the first collection of Sherlock Holmes stories appeared in 1892.

Since then, countless retellings of Holmes's adventures have appeared, written or performed by later authors and dramatists who built on Doyle's originals. Film adaptations began in earnest with Basil Rathbone and Nigel Bruce. Between 1939 and 1946, Rathbone made fourteen

221B Baker Street today—the fictional London address of the detective Sherlock Holmes, created by Sir Arthur Conan Doyle. It's now a real address, with a complete Holmes museum.

SHERLOCK—AN EPITAPH

by Guest Contributor, Robert Brock K9OSC

By Dave W7UUU

films and a radio series. Together, the two actors brought Holmes vividly to the public. A separate radio series during the 1940s also aired regularly.

Because of Holmes's attention to detail and cunning during his fictitious exploits, writers and filmmakers to this day continue to sustain the memory and enthusiasm for Sherlock Holmes throughout the world.

Although the famous address of 221B Baker Street has become legendary, it was fictional when Doyle wrote the stories. Films depicted Holmes's rented London apartment, where he lived and conducted experiments at that imaginary address. At the time Doyle wrote, Baker Street's numbering did not yet reach 221, though today a Sherlock Holmes Museum occupies that spot. For Holmes and his exploits, 221B Baker Street became a symbol of permanence and the base for his detective adventures.

Holmes enthusiasts might enjoy a visit to St. Paul, Minnesota, and the University of Minnesota's underground Andersen Library. It houses the world's largest collection of Sherlock Holmes and Sir Arthur Conan Doyle material, including needlepoint portraits of Holmes in his famous deerstalker hat. The archive holds some 60,000 pieces of Holmes memorabilia, preserved in a climate kept precisely at 63 degrees and 45 percent relative humidity.

Visitors can also explore the Minnesota History Center at 345 Kellogg Blvd. W., St. Paul, to immerse themselves in the world of the fictional Sherlock Holmes.

Reference in The Logger's Bark Magazine:

The 30 Year Transmitter Hunt Mystery – July 2025 Issue – Page 43
Sherlock Investigates: Radio Failures in Three Acts – Act 1 – August 2025 Issue – Page 48
Sherlock Investigates: Radio Failures in Three Acts – Act 2 – September 2025 Issue – Page 50
Sherlock Investigates: Radio Failures in Three Acts – Act 3 – October 2025 Issue – Page 69

—Robert K9OSC

Sir Arthur Conan Doyle, creator of Sherlock Holmes, in 1914
Photo: Wikimedia Commons

WAZBUG
Bee Keeper

WA7BUG Bee Keeper

A Member Human Interest Story

Ever since I became the *Logger's Bark* editor and turned it into a magazine version of the RCT newsletter, I always imagined a "Human Interest" column—member hams that have interests *outside* of ham radio itself. But the huge amount of time I had to invest every month to produce the basic magazine always seemed to preclude such a feature. However for this, my last issue of *The Bark* as your Editor, I'm delighted to feature young Nathan Brighton, WA7BUG, and his ongoing passion for honey bees! So essentially, this is the "first and the last" of my human Interest story articles. Big thanks to Nathan WA7BUG and his parents for their support in this—*Dave W7UUU*

A Backyard Beekeeper

By Nathan WA7BUG

Back in 2019, my mom and I decided to give beekeeping a try. We both liked the idea of helping the environment and maybe getting some honey out of it too. We started taking beekeeping classes later that year, but they were cut short when the pandemic hit. That didn't stop us, though. We turned to YouTube videos, read what we could find online, and in 2020 we bought our first nucleus colony—basically a small starter hive—and all the supplies we needed to get going.

That first summer was a learning experience. We didn't get any honey, since the hive was still growing, but we managed to keep the bees alive through winter, which felt like a big win. By the next year, they were doing so well that we actually had to pull out a few frames because they had stored too much honey.

Then came May 2022, and things got interesting. Our hive swarmed—about half the bees and their new queen decided to move out and landed right on our backyard soccer net (the photo below). We called someone to help capture the swarm, and the rest of our colony kept right on going. Later that year, we finally harvested our first real batch of honey—over *a hundred pounds* of it! The hive overwintered just fine again.

In 2023, everything was calm. We harvested more honey and overwintered successfully for the third time. In 2024, we decided to upgrade to a Flow Hive, which lets you harvest honey more easily without taking the hive apart. Unfortunately, we lost our queen around that time, and despite getting a new one, the hive didn't make it through the winter.

WA7BUG Bee Keeper

A Member Human Interest Story

But in May 2025, we started fresh with a new nucleus colony and a Saskatraz queen (a hardy strain bred for strong genetics, good honey production, and resistance to mites), and just recently we harvested our first honey with the new setup.

All told, we've had at least four queens over the years. The first one died during our first winter after we used chemical mite strips in the hive. In 2022, we lost another queen when the hive swarmed and replaced her with a younger one, which we marked later that season. Then in 2024, we got yet another queen—but she didn't make it through the winter either. The new Saskatraz queen we have now seems strong and steady, so we're hopeful she'll stick around for a while.

Oh—and that bucket you might notice in one of the photos isn't really a bucket at all. It's a bee smoker. It's one of the most useful tools a beekeeper has. When bees smell smoke, they think there might be a fire, so they go into the hive to eat honey and prepare to move if they need to. That natural instinct actually makes them calmer and less likely to sting, so they're easier to work with. The simple way to say it? The smoke just calms the bees.

Our single hive sits under an umbrella in the backyard, sharing space with our nine chickens. It's not exactly a big operation, but it's a fun and fascinating hobby—and for a small corner of a regular suburban yard, it's amazing how much life and activity there is buzzing around back there.

-Nathan WA7BUG

Photos provided by Nathan WA7BUG

A view inside the hive showing the honeycomb frames

The all-important bee smoker used to keep the bees docile while working on the hive

GENERAL MEETING

Eagles Aerie #2933 South Tacoma

President Adam W2NCC and Secretary-elect Dave W7GEL gear up to start the November meeting

Decent turnout for today's meeting

Dave W7UUU begins his presentation on "Limited Space and Stealth Antennas" with many hands-on examples
Photo by Anne N7ANN

Meshtastic tech meeting before the General Meeting starts

All photos this page provided by Dave W7UUU except as noted

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email loggersbark@gmail.com

After the meeting, attendees wander by the Limited Space antennas demo pieces

Sean W7ETT and Al N7OMS

Anne N7ANN and Gary WG7X

Rob K7QJ showing of the 4-pack of QRZ stickers as his prize for being first to provide a correct answer to a presentation question

All photos this page provided by Dave W7UUU

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History of the 6146 Family of Beam Power Tubes

I INTENDED THIS ARTICLE TO GO IN THE August 2025 "Tube Issue" but simply ran out of space. But it's an interesting topic to me, and I have to think it is to many other hams—especially "hams of a certain age" who may have used tube gear in the past. Or for that matter, perhaps some newer hams seeking the nostalgia of the past—maybe buying a cool old hybrid HF rig like a Kenwood TS-830 from the early 1980s, complete with WARC band coverage? Many of the hybrid transceivers of the era used 6146 tubes for the final amplifier. But so did a host of other transmitters—from the venerable Heathkit DX-35 and DX-40, the DX-60, to the Viking Adventurer, Knight-Kit T-150, Eico 720, and even my first "new to me" transmitter in 1975, the Globe Scout 680A.

2E26
6146
RCA ELECTRON TUBE
For civil defense or mobile transmitters
your best bet is beam power
These rugged, RCA-developed VHF beam power tubes have no equals for mobile or emergency rigs. Because of their high efficiency and high power gain, they require less drive and deliver more output at lower plate voltage, than any other similar types of comparable price range. Translate these advantages into practical results and they spell power economy, more watts per dollar, and compact transmitter design.
The RCA 5763 miniature beam power tube is ideal as the final in a low-power rig, as a frequency multiplier, and as the driver for an RCA-2E26 or 6146. As a final it will handle 17 watts input on cw and 15 watts on phone with a simple 300-volt power supply.
The RCA-2E26 beam power tube will handle a full 40 watts input on cw and 27 watts on phone . . . and can be modulated with a 6N7 Class B operated. It also makes an excellent driver for the new RCA-6146.
The RCA-6146—the tube that's tailor-made for "2"—will take 64 watts on cw and 48 watts on phone at 150 Mc . . . yet it's only a trifle larger than a 2E26!
Ask your RCA Tube Distributor for the full story on these VHF beam power tubes . . . or write RCA, Commercial Engineering, Section Harrison, N. J.
TUBES FOR THE PROFESSIONAL . . . PRICED FOR THE AMATEUR
The dependability of commercially proved RCA Tubes costs you no more. Buy genuine RCA Tubes and you buy the best. See your local RCA TUBE DISTRIBUTOR.
RADIO CORPORATION of AMERICA
ELECTRON TUBES
HARRISON, N.J.

There were numerous variations of this extremely popular tube, and over my many years as a ham, I've heard the good, the bad, and the ugly of some of them—but not without really understanding the differences and why some variations were good for some applications, but others were not.

The 6146 tube is one of those classics that even to this day just refuses to fade away. RCA introduced the first 6146 in 1952 as a compact, rugged RF transmitting tube for amateur, commercial, and military service, and in one variation or another, it turned up in everything from homebrew HF transmitters to mobile and airborne equipment through at least the 1980s. Technically it's a beam-power tube (a beam tetrode by construction), intended for Class C finals and linear service at HF and VHF. Over the years the 6146 family split into a few distinct variations with

History of the 6146 Family of Beam Power Tubes

specific dates and ratings you should know: the original 6146, the 6146A with its "dark-heater" improvement, and the later 6146B, which RCA introduced in 1964 with a beefed-up plate structure and significantly higher ICAS (Intermittent Commercial and Amateur Service) ratings.

The 6146B was a real step up in plate dissipation and ruggedness, but its internal changes created enough differences that it sometimes refused to behave in transmitters designed around the earlier versions (the 6146 and 6146A).

Electrically the split in tube versions can really matter. The older 6146 and 6146A were rated around 25 watts plate dissipation, and equipment built in the 1950s and early 1960s expected those characteristics. The 6146B raised dissipation into the 30–35 watt class, with 35 watts being its ICAS limit rather than a *continuous* commercial service rating. That came with changed inter-electrode capacitances and bias curves. Swapping out a 6146A for a 6146B *could* cause weirdness. Not all rigs experienced instability when the B was substituted, but many—especially higher-quality SSB and AM gear such as Collins rigs—required neutralization tweaks to maintain proper stability and gain balance.

Matsushita S2001A tube, based loosely on the RCA 6146B, widely adopted by Kenwood. Photo by WorldTubeCompany.com

The 6146A otherwise remained close enough to the original that substitution between those two was usually uneventful, while the B became a different branch of the family tree altogether.

Ruggedized versions followed too. The 6146W was a military-qualified build, designed to survive severe vibration, temperature extremes, and the kind of abuse encountered in aircraft and field radios. Commercial service saw equivalents under the 8298 and 8298A designations, the latter aligning with the 6146B ratings. These often turned up in mobile FM transmitters and marine gear where long service life was expected.

But to murky the waters a bit, the Japanese manufacturers added their own spin. Matsushita (now Panasonic) developed the S2001A tube, which Kenwood used heavily in their hybrid transceivers of the 1970s and early 1980s, including the TS-520 and TS-820 lines. The S2001A was essentially a refined 6146B with very consistent manufacturing tolerances, optimized for linear service in push-pull pairs. While functionally close, it wasn't always a perfect data-sheet match to the American 6146B. Some later Kenwood models supported U.S.-made 6146Bs through slight circuit adjustments, but earlier rigs were designed *specifically* around the

History of the 6146 Family of Beam Power Tubes

characteristics of the Japanese S2001A and worked poorly with substitutes.

For Kenwood owners this meant reliable, predictable operation without the neutralization headaches that sometimes came with U.S. tubes, though it also meant that substituting back and forth wasn't always seamless.

A practical word of advice has held steady over the decades—advice I first heard from my Mentor/Elmer Hank Perozzo W7UD back in 1975: never mix tube types in the same final stage, and always use the specific type the manufacturer recommends. Within the 6146 family the differences are enough to matter, particularly in rigs with dual finals that depend on matched characteristics. In single-tube rigs like the Heathkit DX-40, which was designed for the original 6146, you're best off sticking with the plain old basic 6146 or the 6146A. The later B will sometimes work, but the circuit voltages and neutralization were drawn up for the earlier tube and usually behave better with it. Try it—but if the transmitter behaves weirdly on the upper bands, and it lacks a way to neutralize it, go back to the plain 6146.

6146 tubes of all flavors still abound—mostly from Chinese manufacturers, as well as NOS tube resellers. Millions were made, and the 6146 is still being made today. Photo from a random ad on Amazon—there are many resellers of such tubes today.

There are other family offshoots as well. RCA marketed the 6293, a pulse-rated ruggedized version prized "back in the day" for 10-meter use. Mobile equipment made use of 12-volt filament versions under the 6883, 8032, and 8552 designations. All of these remind us that the 6146 design was versatile enough to spawn a whole catalog of siblings, each tuned for a particular service environment. And they are not necessarily all interchangeable. It's always best to simply use what the manual tells you to use.

All told, the 6146 and its kin became one of the most successful transmitting tube families ever produced. Seventy years on, they're still glowing away in vintage transmitters and transceivers, a testament to RCA's original design and the refinements that followed. I have multiple transmitters in my own shack that still use a 6146 and can attest to the fact they are rugged, reliable, and will last practically forever if you don't abuse them.

-Dave W7UUU

STRAY TOPICS OF INTEREST:

Voice Keyers: 1970 Style

A recent global SSB contest just wrapped up, and the buzz on several discussion forums afterward was outrage over all the supposed "AI operators." Comments like, "The voice of the calling station is identical for every CQ, but when he makes a contact, his voice is different," and "The instant a QSO ends, he's calling CQ again in exactly the same tone and voice." Lamentations and gnashing of teeth followed: "Why all the AI in contesting? Isn't it bad enough everyone's a 59 that now they have to use AI too?"

It's not AI, folks—they're using voice keyers. Just simple recorders that play back a pre-recorded "CQ Contest," saving the operator's voice. They've been around for decades, long before anyone thought of AI. You just hear them more now because nearly every modern HF radio includes one. Back in the day, MFJ sold stand-alone voice keyers, and Icom and Yaesu offered plug-in "Voice Modules" to add the same function for contesting.

Even in the 1970s—and earlier—voice recordings were common. In the photos below, Craig E. Larsen, WA7HTN, operates Field Day 1970 for W7DK, Radio Club of Tacoma. Behind his head hangs a five-inch reel of tape, an endless loop prerecorded with "CQ Field Day W7DK," the player being triggered with a footswitch. Each operating position had its own identical loop and tape player, saving voices and keeping the stations on the air—even if the voice calling CQ wasn't the same one that answered the QSO. ■ *-editor*

W7DK archive photos, colorized

Craig Larsen WA7HTN at W7DK Field Day 1970. Fun fact: Craig is the guy who gave me my Novice written test in 1974.

Clearly visible is the 5" tape loop reel, and the reel-to-reel recorder / player on the self above for automated CQ calls

RCT Bulletin Board

Posted notes and other important stuff

Here's a **useful tip** when reading the Bark: if you want to view a link, "right click" > "Open link in new window"… that way you won't lose your place in the Bark!

Next month, this space will be completely EMPTY!

Hopefully someone comes along to post a few notices!

73 everyone—Dave W7UUU

Last month's Hidden Object—

On page 11

Last Month's Hidden Word:

Condenser

It was hidden on Page 108, lower left

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WA7BNM CONTEST CALENDAR

Contest events for the coming month

HUGE THANKS TO Mr. Bruce Horn, WA7BNM for publishing his "Contest Calendar" for all these many years… a truly wonderful resource for finding virtually every ham radio contest on Earth that might be happening, in most any mode and most any region in the world. Follow the link to take you to the site, then sort through the various options to find the specifics of every upcoming event. For now, here's the WA7BNM Contest Calendar for the this month. Click the calendar below to visit Bruce's site directly.

December 2025	
ARS Spartan Sprint	0100Z-0300Z, Dec 2
QRP ARCI Topband Sprint	0000Z-0300Z, Dec 4
ARRL 160-Meter Contest	2200Z, Dec 5 to 1600Z, Dec 7
Wake-Up! QRP Sprint	0600Z-0800Z, Dec 6
PRO CW Contest	1200Z, Dec 6 to 1159Z, Dec 7
FT Challenge	1800Z, Dec 6 to 2359Z, Dec 7
ARRL 10-Meter Contest	0000Z, Dec 13 to 2359Z, Dec 14
PODXS 070 Club Triple Play Low Band Sprint	0000Z, Dec 13 to 2359Z, Dec 15
TRC Digi Contest	0600Z, Dec 13 to 1800Z, Dec 14
SKCC Weekend Sprintathon	1200Z, Dec 13 to 2359Z, Dec 14
ARI 40/80 Contest	1300Z, Dec 13 to 1359Z, Dec 14
QRP ARCI Holiday Spirits Sprint	2000Z-2300Z, Dec 14
4 States QRP Group Second Sunday Sprint	0100Z-0300Z, Dec 15
NTC QSO Party	1900Z-2000Z, Dec 18
AGB-Party Contest	1600Z-1700Z, Dec 19
RAC Winter Contest	0000Z-2359Z, Dec 20
OK DX RTTY Contest	0000Z-2359Z, Dec 20
Croatian DX Contest	1400Z, Dec 20 to 1400Z, Dec 21
ARRL Rookie Roundup, CW	1800Z-2359Z, Dec 21
Run for the Bacon QRP Contest	2300Z, Dec 21 to 0100Z, Dec 22
SKCC Sprint	0000Z-0200Z, Dec 24
DARC Christmas Contest	0830Z-1059Z, Dec 26
Stew Perry Topband Challenge	1500Z, Dec 27 to 1500Z, Dec 28
RAEM Contest	0000Z-1159Z, Dec 28

Click Calendar to visit online

***WA7BNM** Contest Calendar data used with permission*

Background Image Source LINK

THE W7DK ELMER BOARD

Do you have a skill or tool to help new hams?

YOU! YES *YOU!* Do YOU have a skill you could pass on to new amateur radio operators? Do you possess a skill or piece of gear that you're willing to share with others to fix antenna problems, diagnose noise issues, drive a ground rod, teach Morse, help teach technical topics? If the answer is YES you too could be a W7DK Elmer!! Let any officer know what your skills are or how you could help new hams get a leg up on the hobby. And if you're one of those already on the list, are there any changes we should be aware of? If so please hit the email address (found bottom of page on the right) and let us know so we can update the W7DK Radio Club of Tacoma "Elmer Board".

NEW HAMS OR MEMBERS: If you are looking for help, and NEED AN ELMER to help guide your way, use this table! Find the skill you need on the left, then look for an Elmer Provider of that skill on the right and reach out to them. ALL of these Elmer's have committed to helping so please don't hesitate.

ELMER ("MENTOR") BOARD

Do you need help with some area of ham radio?

List of members' areas of interest:

1. Technical questions, Classes
2. Help with Morse Code
3. License Examinations
4. Antenna and Station Planning
5. Antenna and Tower Erection
6. Buying Equipment (new or used)
7. Equipment Repair
8. Understanding and Using Your Gear
9. DXing and Contests
10. Club and ARRL Activities
11. Using Test Equipment
12. IRLP, Digital, SDR, APRS, WinLink, etc.
13. Basics of Electronics—how things work

Current as of January 2025

Name/Call Sign/Phone Number/Topic:

Adam W2NCC 360-870-7894 (4, 5, 6, 7, 11)
Al N7OMS 253-495-9068 (10, 12)
Mike W7XTZ 253-405-8095 (6, 8, 10)
Stephen AD7AB 253-212-9437 (1, 3, 4, 12)
Randy WB4SPB 253-761-9391 (2)
Phil K7PIA 253-307-4781 (9, 10, 12)

Are you an RCT member with skills to offer?

Please let any officer know and we can add you!

Note: *Providers or users of the Elmer Board must be local to the Radio Club of Tacoma. This is a local club service for our local members only. Thank you!*

STRAY TOPICS OF INTEREST:

Try out a PRC319 "Manpack Transceiver" for free*

Contributed by Paul WØRW

TRY OUT A PRC319—FREE* BACKPACK RADIO LOANER NOW AVAILABLE!

Ever wanted to get your hands on a PRC319? Now you can. One of these legendary backpack HF rigs is available on free loan to any licensed ham in the lower 48.

Whether you want to test it in the field, show it off at a club meeting, or just finally see what all the fuss is about—this is your chance.

Not familiar with the 319? It's a rugged, fixed-frequency, channelized HF radio originally built for military use. It's channelized—no VFO—just punch in a channel and go. It runs CW, USB voice, or data at either 5 watts or a full 50 watts. You can watch a great overview video at THIS YOUTUBE LINK.

You can read more about the PRC319 HERE.

The loaner comes as a complete kit: PRC319 radio, antenna tuner, handset, battery/AC supply, and satchel. Due to the battery, it ships *UPS only*.

Here's how this program works:

If you want to borrow it, drop me a line and I'll send you the loan agreement. When your turn comes up, I'll let you know. You'll send upfront $100 to cover shipping out, and you'll be responsible for return shipping too—figure around $200 total. You get to keep it for up to 90 days.

Sorry—CONUS *only*. No shipments to Alaska, Hawaii, or Puerto Rico. You'll need a General class or higher license and must appear in the FCC database.

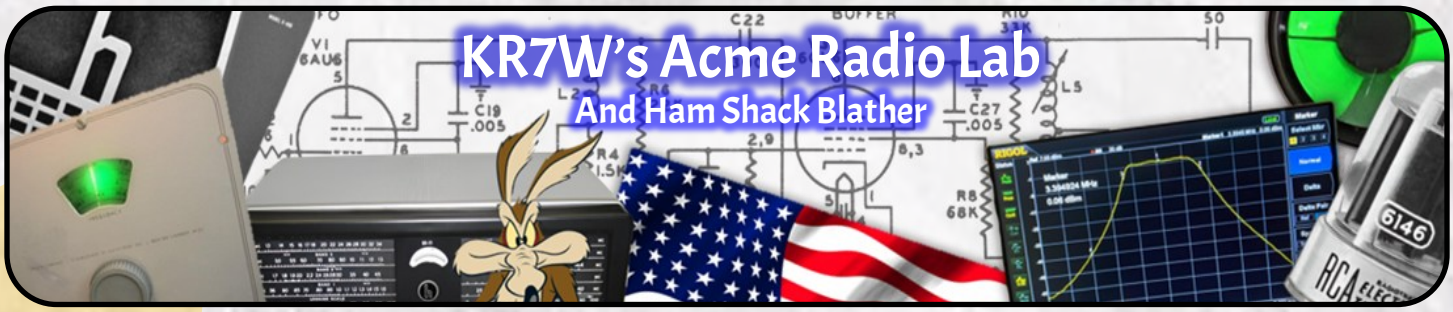
This is the actual PRC319 "Manpack transceiver" that is available to borrow for up to 90 days (continental U.S. only).

This unit was donated by Clare Owens Jr. N2RJB, of Apex, NC. Accessories came from Al G8LIT. Thanks to both for helping make this possible.

Interested? Reach out to Casey Efaw KD2YMM KD2YMM@gmail.com

Information provided via WØRW

*Just pay shipping both ways. Disclaimer: Neither W7DK nor Editor W7UUU have any direct involvement in this offer. All details of the transaction and transfers of the radio are solely between the borrower & WØRW & Casey



WHEN I'M ON THE AIR AS A CW OPERATOR, quite often I use the Reverse Beacon Network (RBN) to see if "Am I Getting Out?", especially when my CQs are not being answered or my pounces are not responded to.

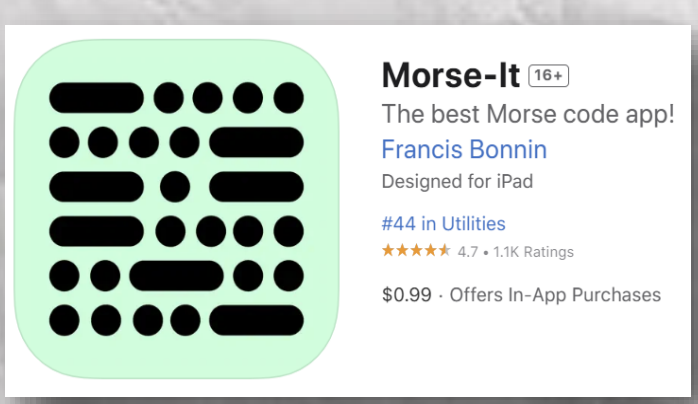
But what if you are an SSB operator, don't do CW and want to know "Am I Getting Out?" No problem. Modern rigs in CW mode have memories that can be programmed using front panel push buttons. Using the radio's keypad (or external USB keyboard if it's so equipped), record into memory the following: **V V V TEST TEST TEST WX7ABC WX7ABC** (using your own call sign of course). Then tune to a not-busy frequency in the CW section of the band and push the memory button to send the message. You can check your success after 10–20 seconds by simply looking up your call sign on the RBN to see if you have any "hits" (hopefully you will and these mapped responses will show you where your signal is reaching and being decoded—even if you don't know a single letter of Morse).

But what if your rig is a boat anchor, like a Kenwood TS-520 or Yaesu FT-101E with no fancy Morse code memories? Using a recording device like a smartphone or a Mission Impossible-style mini tape recorder (or modern digital equivalent), have a CW buddy ham send a clean-sounding, well-spaced Morse message using his rig as a code practice oscillator into your recording device (RF power feeding a dummy load, and just the sidetone audio being recorded). Note: The tones must be sinusoidal, clean, and crisp. You will be unsuccessful with sloppily sent or square-wavy distorted sounding Morse tones.

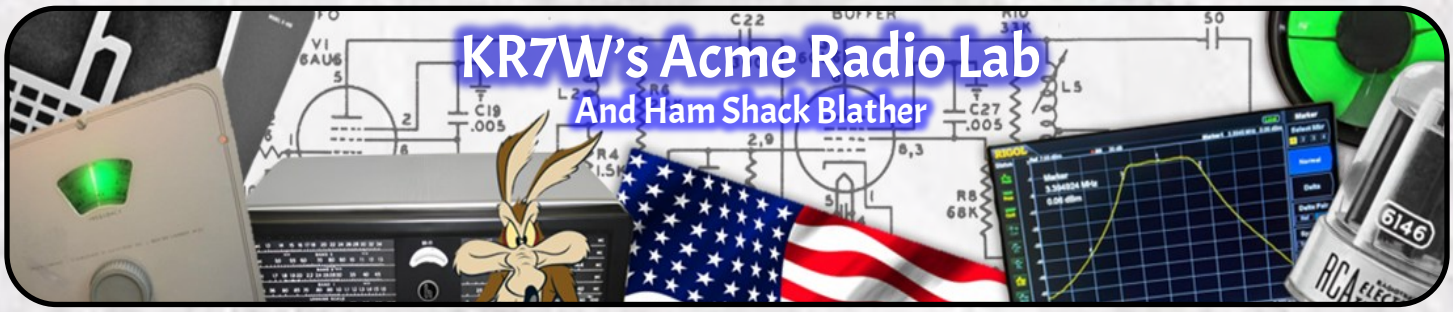
Test it out. Tune your old timey boat anchor SSB rig to a clear CW frequency. Turn up the recorder's volume, place it next to the mic, push play and then the mic PTT button so that the recorded Morse is playing right into the microphone. Make sure that the power output indicator is showing CW pulses. Do this a couple of times for good measure.

Go to Reverse Beacon Network, enter your call sign to discover where you are heard and what your signal to noise ratio is.

Not being heard? With a modern or boat anchor rig, your CW signal might be sloppily sent, not clean sounding, or propagation is very poor—like a CME or X-class flare causing Northern Lights. Check the QRZ.com Space Weather page. Suggestion: Try and perfect this at your home station before using it at a



The "Morse-It" app for iPhone—there is an equivalent for Android called "MORSE IT!" for android users as well. They are different apps despite the name, but both do the same things.



POTA activation. Stronger suggestion: Use this method of checking "Am I getting Out?" judiciously—just enough to find out, then leave it at that.

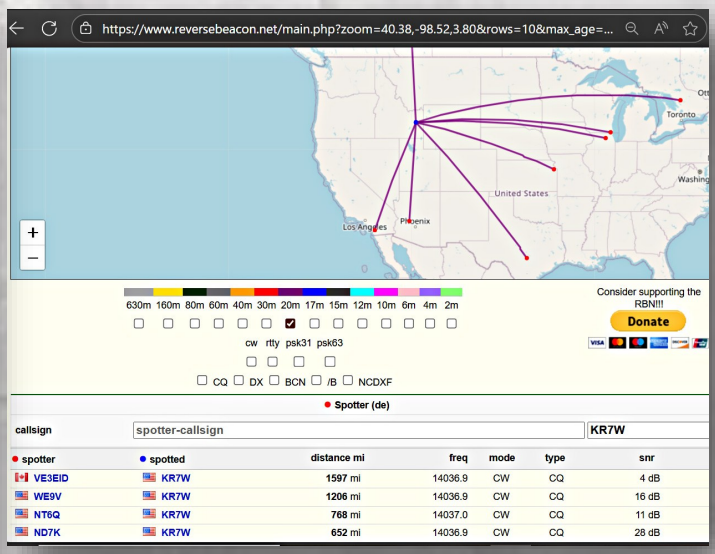
In the photo below I am using a smartphone app

I'm holding the radio's microphone up to the speaker on the iPhone, using the Morse-It app to send the code used for the RBN reports. You don't need to know a letter of Morse to do this, and as long as your mic gain isn't set too high (thus causing distortion), you should get good results from the RBM to confirm (or not!) that you are getting your signal out.

called "Morse-It" where I have encoded a text message and then it sends Morse tones. A Morse message recorded with the "Voice Recorder" app will also work.

If you squint just right at the photo, you might see the power output needle is at 50 watts and the carrier pip on the bandscope.

This is a really easy way to see where the band is open for you at any moment, even if you don't know Morse.


https://www.reversebeacon.net/main.php?zoom=40.38,-98.52,3.80&rows=10&max_age=...
Toronto
United States
Los Angeles
Phoenix
630m 160m 80m 60m 40m 30m 20m 17m 15m 12m 10m 6m 4m 2m
cw rtty psk31 psk63
CQ DX BCN /B NCDXF
Consider supporting the RBN!!!
Donate
Spotter (de)
callsign
spotter-callsign
KR7W
spotter spotted distance mi freq mode type snr
VE3EID KR7W 1597 mi 14036.9 CW CQ 4 dB
WE9V KR7W 1206 mi 14036.9 CW CQ 16 dB
NT6Q KR7W 768 mi 14037.0 CW CQ 11 dB
ND7K KR7W 652 mi 14036.9 CW CQ 28 dB

This RBN screen capture shows the results of this simple test. My station is at the start of the purple trace lines, that indicate where my 50 watts of RF fury were detected, and at what signal level. You can zoom the chart—but in short, the farthest distance was 1597 miles with a 4 dB signal-to-noise ratio, and the shortest was 652 miles and 28 dB SNR. 4 dB would be pretty marginal for SSB but it could be done (and certainly CW). But the higher reporting paths would make for very solid SSB QSOs, with 28 dB being "armchair copy".

Hopefully this little trick will help folks out who want to have that "RBN Experience" but are not Morse-proficient hams.

OUT

Rich KR7W

DOWNSIZED: BOTH THE RV AND THE RADIO

Getting older comes with some perks and some downsides. One advantage is that retirement allows time to travel and time for more ham radio fun. The XYL Ruth K4KLQ, and I have been traveling by RV through the U.S. and Canada for quite a few years, playing radio from the mountains to the deserts, across the fruited plains and from sea to shining sea.

One of my most memorable experiences dates from 1995. We were on the road in Texas, heading for the cool peaks of the Colorado Rockies when the cell phone ding-donged. It was *CQ Magazine* Editor Rich Moseson W2VU. I had written many articles over the years, often about the joys of QRP. Rich asked if I would be willing to take on the position of QRP editor, with the first column due in three weeks.

"Impossible," I protested. “We’re on the road and won’t be back for a month at least.”

"Do you have a laptop?" he asked. "Do you have a cell phone camera? Do you have a radio with you?"

"Yes to all," I answered.

"So what's the problem?" he demanded. And so, I began the search for material for my first *CQ* column. Combining RVing and QRP turned out to be a match made in heaven. I met many interesting folks out there and stumbled upon all kinds of unexpected radio stories—from Navajo Code Talkers in Arizona to hams with portable towers and big antennas in RV parks.

Now, with increasing age and the inevitable aches and pains that come with it, operating a large RV and traveling long distances has become more difficult. Reluctantly, we downsized from a giant fifth-wheel trailer to a 28 ft. pull-behind, and finally to our current 17 ft. mini trailer. It’s easy to hitch up and simple to maintain, though living is a bit tight inside. Good thing we’re not six-footers.

A Mini QRP Radio

What better to go along with a munchkin-sized RV than a truly mini QRP rig? My good friend Ron, W4DNQ (just three letters from me, W4DNN), surprised me one day with a package that arrived in the mail. Inside was a (tr)uSDX QRP transceiver he had built. This is a tiny radio, available in kit form and now also fully assembled. It’s not just another bare-bones QRP rig!

The brainchild of DL2MAN and PE1NZZ, this palm-of-the-hand five-band radio is remarkable. Covering 80, 60, 40, 30, and 20 meters, its efficient class-E final amplifier puts out a full five watts on CW, SSB, AM, and FM. With an onboard speaker and microphone and a PTT button that doubles as a key, all you need is a battery and an antenna. A tiny OLED display manages a large array of functions. The latest iteration adds 17, 15, 12, and 10 meters, plus a

(tr)uSDX QRP Transceiver—all photos by the author

panadapter display. Firmware updates are easily done via USB. This little rig is a powerful computer in its own right—and it still fits in the palm of your hand.

QRP with a compromised antenna is always a challenge, but the results can be mind-blowing. The first time I tried out this tiny rig was on 20 meters SSB using a small magnetic loop antenna in the backyard. I had barely hooked it up when I heard a DL station (Germany) calling CQ. I answered in my fractured German, and we had a 10-minute QSO. Wow! All the way across the Atlantic and half of Europe on 2.5 watts—powered by AA cells, no less.

It brought to mind an illustration I had seen years ago in *CQ*. It's a table showing how much power is needed for readable copy at the other end. If you're being received at S9 with 100 watts, you could dial it down to 6 milliwatts and still be heard. It gives you a lot of confidence to operate QRP and even QRPp.

On the Road Again

Needless to say, I had to try this setup on the road. With the summer heat and humidity in Florida, our plans included an RV escape to the moderate days and cool evenings of the Blue Ridge Mountains. From our campsite on a babbling trout stream near Maggie Valley, North Carolina, we could drive to trailheads and hike up to several not-too-difficult summits in both the Blue Ridge and Smoky Mountains to activate mountain tops for Summits on the Air.

Our summit of choice this time was Richland Balsam, the site of one of our first SOTA activations back in 2019. The summit, at 6,400 feet, is reached by a moderately challenging 400-foot hike from the "Highest Point on the Blue Ridge Parkway." The first time we climbed it, I brushed against some foliage harboring a nest of yellow jackets. Needless to say, *it was memorable*. This time I watched where I stepped.

HOW LOW CAN YOU GO CHART

Your Transmitter Power (watts)	S-Unit Report Received								
	S9 + 20	S9 + 10	S9	S8	S7	S6	S5	S4	S3
1000	0.63	6.3	63	251	1	4	16	63	251
900	0.56	5.6	56	226	0.9	3.6	14.3	57	226
800	0.5	5	50	201	0.8	3.2	12.7	50	201
700	0.44	4.4	44	176	0.7	2.8	11	44	176
600	0.38	3.8	38	151	0.6	2.4	9.5	38	151
500	0.32	3.2	32	126	0.5	2	7.9	32	126
400	0.25	2.5	25	100	0.4	1.6	6.3	25	100
300	0.19	1.9	19	75	0.3	1.2	4.8	19	75
200	0.13	1.3	13	50	0.2	0.8	3.2	13	50
100	0.06	0.6	6	25	0.1	0.4	1.6	6	25
	(_____ MILLIWATTS _____)				(_____ WATTS _____)				
dB above S2	62	52	42	36	30	24	18	12	6

Example: I am running 600 Watts, & receive a signal report of S-6. I can lower my power to 2.4 Watts and still be copied (power of a standard flashlight).

Double your power = 3 dB = 1/2 S-Unit Ten times your power = 10 dB or 1 2/3 S-Units

1000 milliwatt = 1 watt or 1 milliwatt = .001 watt By K4OCE/QRP as published in CQ Magazine

Fig. 1. Reprinted from August 2001 CQ. See text for further instructions.

CQ Magazine "How Low Can You Go" chart

We set up on a bench conveniently placed at the summit, though I could have operated the rig handheld. Our antenna was a Hustler mobile antenna with a few wire radials. Not the best arrangement, but easy to pack and deploy—ideal for senior hams. I also brought along a tiny digital recorder so we wouldn't need paper logs. To guarantee a few QSOs, we phoned two ham friends, and despite terrible band conditions—more solar flares and absorption than usual this year—we managed to work K8AQL and W4DNQ on 20 meters, both back home in Florida. Conditions weren't good enough for SSB, but they heard my S1 CW signals.

Back at camp, I spent one sunny afternoon and a rainy morning playing radio with the Hustler mounted on the truck's hitch. I made two solid SSB QSOs before calling it good. There's so much to do and so little time at our mountain retreat that ham radio, for once, took a back seat.

The Music of the Night

Listening at night is fun too. I set up the tiny radio at my bedside and most nights tuned in CW—"the music of the night"—on 40 meters. I've been doing this at home for years and have improved my head copy from zero to over 20 WPM. Earbuds ensure that I don't wake Ruthie. Nocturnal CW takes advantage of a psychological edge: once you tune into an interesting conversation, you tend to "lock on" and copy faster.

Downsizing hasn't really cramped our style. We do miss the big recliners, the full-sized kitchen, and running a 100 -watt rig on a proper desk. But the ease of maneuvering a tiny trailer—and the challenge of operating a tiny radio—does a lot to keep RV QRPing fun.

-Dennis W4DNN

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Through the Time Tunnel with the C64

By Cornelius Brauner DO1FER

THROUGH THE TIME TUNNEL WITH THE C64

After stumbling across a few old magazines about the Commodore 64, I decided to step through the "Time Tunnel" and see what was left of that world here in 2025. (If you don't remember the Time Tunnel TV series from 1966, you can still find clips on YouTube—and it's worth the minute for grins.)

So, back we go to 1984. The Olympics were in Los Angeles, Ronald Reagan was in the White House, and home computers were suddenly finding their way onto kitchen tables and into bedrooms everywhere. In Switzerland, a few intrepid hams made the first contact on 47 GHz. The Cray-1 supercomputer, then the pride of cutting-edge computing, was busy rendering scenes for The Last Starfighter. The new MIDI music format was linking synthesizers and computers in living rooms. And a whole generation of hobbyists was hammering away on sleek beige keyboards, coaxing magic from lines of BASIC code.

Most of us weren't building databases or writing operating systems—we were just trying to make something work. Maybe a weather simulation. Maybe a simple game. Or *maybe* a program to learn Morse code. The thrill was in typing in those long program BASIC code listings from a magazine, hitting RUN, and watching something you keyed in spring to life.

So what became of all that? The spirit never really vanished—it just evolved. The problems got bigger, the machines faster, and the languages more powerful. Yet the curiosity that drove those early experiments is still out there, it's just expressed differently.

When I pulled up one of those old 64'er magazine issues online, I found a familiar face—a CW (Morse) trainer written entirely in BASIC. You can still find it at 64er-magazin.de, yellowed pages and all. I scrolled through the code for the first time in forty years and was amazed to see that the whole thing took just 5 kilobytes. Five!

These days, a simple Morse training app for a smartphone can weigh in at twenty-five megabytes or more. The old C64 had a 1 MHz processor. Yet somehow it all worked. *Beautifully*.

What was the secret? There wasn't one. Just efficiency born of necessity. Back then, every byte mattered, every loop had to count. Even the mighty Cray-1 supercomputer of 1984 would barely keep pace with a budget desktop today. And forty years from now, the new Jupiter supercomputers will seem just as quaint. But BASIC—humble, unpretentious BASIC—will still run, waiting patiently for someone to type in a few lines and make something interesting happen.

Software today leans heavily on massive libraries that solve problems for us, but at the cost of bloat. It's convenient, but it also hides the craftsmanship. Somewhere along the way, we traded elegance for convenience. Still, the art of efficient programming isn't gone—it just needs a little rediscovery. You can see it in things like the Z64K emulator, a full Commodore 64 emulator written in Java that fits in about 2 megabytes. A tidy, modern echo of the old spirit.

Through the Time Tunnel with the C64

By Cornelius Brauner DO1FER

After that little trip through the Time Tunnel, I couldn't resist firing up a C64 emulator myself. The sight of that blue screen with its blinking cursor was like hearing an old friend's voice on the air again. I dusted off the Morse trainer, translated the German text into English, and gave it a new lease on life. So now, a little BASIC program first published in 1984 has returned in 2025—still teaching code, still teaching Morse, still making people smile.

Some things age, but they don't really get old.

-Cornelius DO1FER

LINKS if you want to learn more:

Morsetrainer Program- English2025

Morsetraner Source Code

Vice64 Emulator

Z64K Emulator

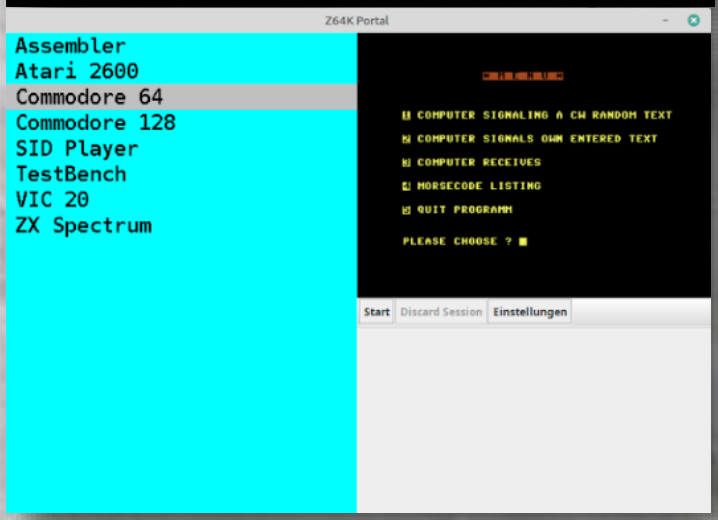
Commodore 64 IEEE History

The Last Starfighter YouTube

The Time Tunnel—trailer video

Buy a RETRO 100% functional C64!

MORSEZEICHEN - MORSE SIGNALS
POWERED BY HAM SPIRIT 2025.
TRANSLATION BY DO1FER / ORIG. CODE 1984
BY JENS MARTENS UND
STEFAN INGENHORST
PLEASE WAIT A T - S O F T W A R E



ENTER YOUR MORSECODE BY USING THE 'F7' KEY!
WHEN READY, WAIT 5 SECS. AFTER THIS, PRESS ANY KEY AGAIN.
ROGER ROGER READY? LETS START NOW !

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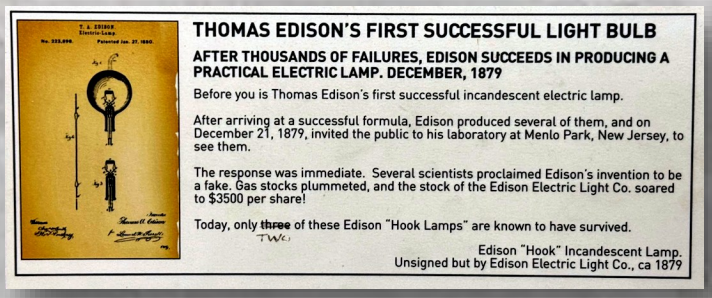
ONE FINAL DISPLAY PHOTO FROM MY AUGUST TRIP TO THE SPARK Museum of Electrical Invention in Bellingham, Washington—it doesn't directly relate to radio but it's nonetheless a pretty amazing object to behold in person: one of only two known surviving examples of the first successful Edison lightbulb. The story goes that there were three made for testing. The lab assistant was asked to bring one to the crowd gathered with Thomas Edison to see the first incandescent bulb ever made (that worked). But in his haste, being nervous, the assistant lost his footing and dropped the bulb, breaking it. He returned and more carefully carried one of the two remaining bulbs to the demonstration. The bulb on display at the SPARK Museum is believed to be one of those very first two ever made (its filament of course failed over the years).

There is however an important connection to radio. Not long after inventing the lightbulb Edison discovered that electrons from a heated lightbulb filament in a vacuum allowed current to flow in one direction to a nearby positively charged electrode. He didn't know what to make of this—but patented the concept regardless as "The Edison Effect". Little did he know that Sir John Ambrose Fleming in 1904 would capitalize on that concept, creating the first vacuum tube, or "thermionic diode", dubbed the Fleming Valve. Edison was so close to inventing the electron tube but didn't realize it until it was too late.

If you're ever near Bellingham, Washington I highly encourage you to pay a visit to the SPARK Museum and spend a few hours seeing amazing artifacts while learning all about early radio.

-Dave W7UUU


THOMAS EDISON'S FIRST SUCCESSFUL LIGHT BULB
AFTER THOUSANDS OF FAILURES, EDISON SUCCEEDS IN PRODUCING A PRACTICAL ELECTRIC LAMP. DECEMBER, 1879
Before you is Thomas Edison's first successful incandescent electric lamp.
After arriving at a successful formula, Edison produced several of them, and on December 21, 1879, invited the public to his laboratory at Menlo Park, New Jersey, to see them.
The response was immediate. Several scientists proclaimed Edison's invention to be a fake. Gas stocks plummeted, and the stock of the Edison Electric Light Co. soared to $3500 per share!
Today, only three of these Edison "Hook Lamps" are known to have survived.
TWC
Edison "Hook" Incandescent Lamp.
Unsigned but by Edison Electric Light Co., ca 1879

Edison bulb display photo by Dave W7UUU

THE WAY BACK PHOTO BOOTH

Highlighted photos from the club's past

Researched & Compiled by the Dave W7UUU

Archive Photo

As I close out my tenure as Logger's Bark Editor, I'd like to share a photo I've used before—but what better way to sign off than with a tip of my hat to four of the young men who founded the Radio Club of Tacoma back in October 1916. I wonder how amazed they'd be to see our club thriving 109 years later. Or perhaps they wouldn't be surprised at all—perhaps they saw clearly what their efforts would grow into, given time. But I have no doubt they'd be astonished at the technologies we now enjoy in a hobby they could only have dreamed of.

In this photo, left to right, are Alvin Stenso 7LB (before WWI), later 7LV—born 1899, SK 1988; Edwin Moe 7AG—born 1898, SK 1970; Howard Reichert 7HR—born 1896, SK 1967; and Dwight Mason 7DL—born 1898, SK 1977. All ranged 17 to 20 years old in 1916.

Thank you, gentlemen, for setting in motion one of the oldest continuously operating amateur radio clubs in the nation. *-Dave W7UUU*

MIGHTY DK! QSO REPORT

Reporting all the HF QSO action from the club

EACH MONTH in the Bark, the Radio Club of Tacoma recognizes the members and guests who have made non-contest QSOs using the HF stations at our clubhouse. Saturday Open House, especially, is a time when members have access to this equipment. Why not sit down at one of our operating desks and make a contact or two? Assistance is almost always available for those unfamiliar with the equipment, and if your license class doesn't permit HF operation, ask the denizens of the HF Room or the Saturday clubhouse host to help you find a suitably-licensed control operator to sit with you. It's a feather in the club's hat for the call sign of The Mighty DK to be heard on the airwaves. So get on the air and get your name in the Bark! (Don't forget to *enter your call sign as the operator* into our logging program.) ■ *-editor*

Clubhouse QSOs during this period:

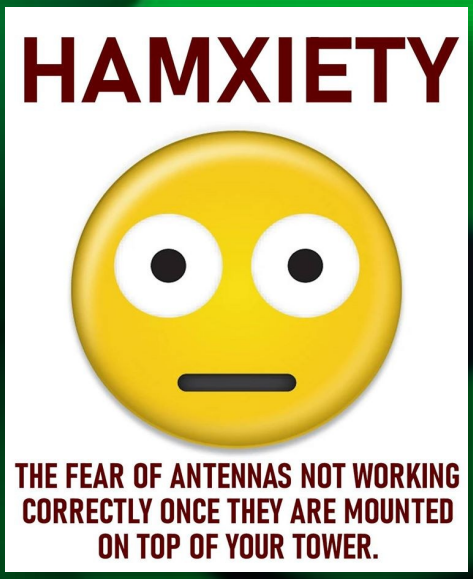
NAME	CALL	QSOs
Gary	WG7X	77
John	K2CCT	51
Nathan	WA7BUG	34
David	W7GEL	32
Mike	W7XH	14
Mike	W7MKE	9
Sean	W7ETT	7
Samuel	KK7USO	6
Julie	W7JUL	3

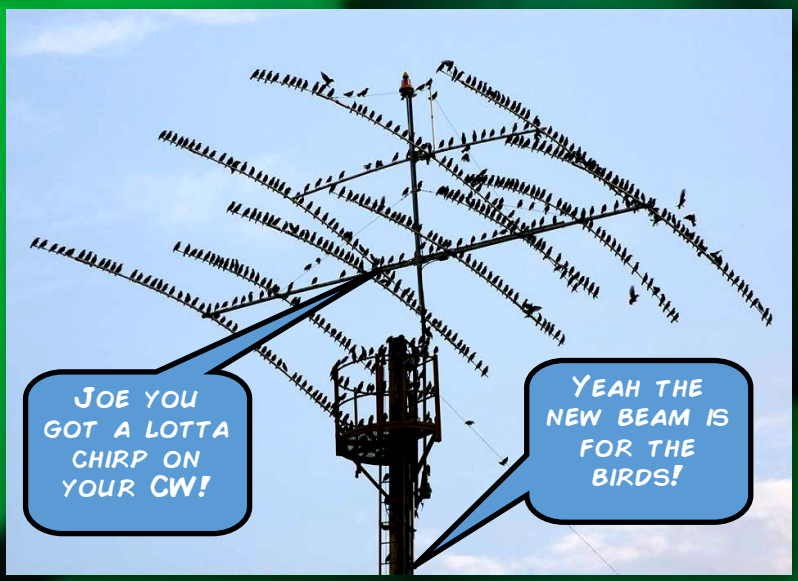
Above: HF Room Flex 6600 & Mercury III

Below: HF Room Icom IC-7610 & KPA-500

Photos this page provided by Dave W7UUU

OK NOW LET'S TRY FT8!





HOW'S DX?

DXpeditions and Notable DX operations

WEB

NG3K Upcoming DXpedition Calendar

December						
2025 Dec01	2025 Dec10	Maldives	8Q7HT	DL7MDX	DXW.Net 20250924	By DL7MDX; 40-6m; mainly FT8; holiday style operation
2025 Dec07	2026 Jan05	Guatemala	TG	LoTW	TDDX 20250605	By AF4CZ as TG9/AF4CZ; 40-10m;; FT8 FT4, perhaps SSB; spare time operation
2025 Dec10	2025 Dec17	Palau	T88AC	LoTW	OPDX 20250912	By JA1ADT fm Koror I (IOTA OC-009, PJ77fi); HF; QRV for ARRL 10m Contest
2025 Dec21	2025 Dec27	Bangladesh	S21DX	LoTW	DXW.Net 20250920	By S21YLJ S21AM S21RC S21FIA S21RED fm Kutubdia I (IOTA AS-127); 160-10m; SSB FT8; QSL via EB7DX
2025 Dec21	2026 Jan02	Surinam	PZ5OZ	LoTW	OZ0J 20250728	By OZ0J; @PZ5RA; 160-6m; SSB CW FT8, perhaps RTTY; QSL via Club Log OQRS or OZ Buro
2025 Dec26	2026 Jan03	Azerbaijan	4K NEW	LoTW	OPDX 20251013	By DL4XT as 4K/DL4XT; HF; CW SSB FT8; vertical, dipole; QSL via Club Log OQRS
2025 Dec30	2026 Jan03	Mariana Is	KH0	LoTW	DXW.Net 20250826	By JO1VRK as KH0/AJ6VJ fm Saipan I; 40 20 17 15 12 10m; QSL via Club Log OQRS
2025 Dec30	2026 Jan03	Monaco	3A	LoTW	DXW.Net 20250324	By MM0NDX as 3A/MM0NDX and MM0SAJ as 3A/MM0SAJ; HF w/ focus on 160-30m, incl 60m; SSB FT8 FT4 RTTY; QSL via EB7DX

Click anywhere on the table above to visit Bill's site directly—the hyperlinks will be active there.

Courtesy Bill Feidt, NG3K
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email loggersbark@gmail.com

STRAY TOPICS OF INTEREST

RADIO ADS FROM 50 YEARS AGO THIS MONTH

W7UUU

MOST "HAMS OF A CERTAIN AGE" will instantly recognize the receiver seen in this 1977 ad from Radio Shack—the iconic Realistic DX-160. An upgrade from the original DX-150, this improved model debuted 50 years ago this month, in time for Christmas 1975. It was Radio Shack's flagship shortwave receiver until the end of 1980 when it was superseded by the lackluster DX-300 digital-display receiver.

When the world talks, you can listen...
with the Realistic® DX-160 Receiver
Full-feature design for HAM/SWL CB/SSB/AM listening 159.95
The modern world is a "global village" when you own the versatile DX-160. Five bands covering 130 kHz to 30 MHz let you monitor all types of transmissions from all over the world. Pick up all the CB channels, both AM and SSB. Hear local programs and news from places like Paris, London, Cairo, Rome and Moscow. Tune in longwave aviation/marine weather reports and special civil defense disaster frequencies. Receive WWV time signals and radio propagation forecasts. And you'll be surprised at the DX-power you get on the standard AM broadcast band. Eleven controls and switches let you really "pull out" those distant stations. Main tuning control plus precision bandspread tuning calibrated for the Amateur bands. A product detector and BFO assure superior SSB and code reception. Controls for audio and RF gain, BFO pitch and antenna trim. Switches for automatic noise limiting, AM-to-CW/SSB, fast or slow automatic volume control, and standby for use with a transmitter. FET's in all critical stages for maximum sensitivity and selectivity and crystal-filter IF stages for reduced noise. Illuminated S-meter. Headphone jack. And the matching speaker is included. U.L. listed. The DX-160—what a way to travel!
FREE!
Come in for your copy of our colorful 1977 catalog and see what's really new in electronics. 164 pages, 2000 items.
SOLD ONLY WHERE YOU SEE THIS SIGN:
Radio Shack®
A TANDY COMPANY • FORT WORTH, TEXAS 76107
5000 LOCATIONS IN NINE COUNTRIES

The DX-160 actually is a pretty solid receiver at the time. It covers 150 KHz (longwave) all the way to 30 MHz in 5 bands, with a product detector for SSB and CW reception. Of course, it was 100% analog with a large slide-rule tuning dial and "Hallicrafters style" bandspread tuning. As typical of most analog receivers of the day, the band coverage gets squeezed tighter and tighter as you move up in bands. Band A (longwave) covers 150 KHz to 400 KHz over the entire dial range, whereas band E runs from 13 to 30 MHz. This means it's not terribly suited for use on the upper bands where signals are squeezed into a very small tuning range.

STRAY TOPICS OF INTEREST

RADIO ADS FROM 50 YEARS AGO THIS MONTH

W7UUU

The design is pretty simple and typical of the fancier portable shortwave receivers of the day, but built into a desktop cabinet instead of in a case with a handle. The DX-160 is a single-conversion superhet with a conventional 455 KHz IF. There was no internal speaker, but rather it came with the SP-150 external speaker that was originally included with the earlier DX-150 version of the receiver.

Fun fact: in the 1995 Tom Hanks film *Apollo 13*, a relabeled SP-150 speaker is seen frequently with actress Kathleen Quinlan who played Marilyn Lovell, the wife of Hanks' character Jim Lovell. In the movie, the props department placed a blue NASA badge in the center of the speaker to cover the "Realistic SP-150 Communications Speaker" text.

The DX-160 receiver was of course not actually made by Radio Shack, but rather sourced from a Japanese firm called General Research of Electronics, Inc. or GRE. 株式会社　ゼネラルリサーチオブエレクトロニックス… in Japanese. Founded in 1961 in Tokyo, GRE was an OEM for a number of American electronics brands. For Radio Shack, they designed and manufactured many of the scanners and CB radios sold from the late-1960s well into the 1970s. In 1977 they opened a U.S. branch in Belmont California and ultimately became the North American distributor for Alinco brand ham gear.

Left: *Screen capture from* Apollo 13 *showing the SP-150 with a blue NASA label, being called a Squawk Box.* **Right**: *my actual SP-150 speaker*

STRAY TOPICS OF INTEREST

RADIO ADS FROM 50 YEARS AGO THIS MONTH

W7UUU

So how does the DX-160 perform on the air? Actually, pretty well all things considered. The very first thing you notice is it really is an eye-candy piece, with a very solid build quality that's apparent at first glance. It has some weight to it—not Hallicrafters or Hammarlund weight, but it doesn't feel cheap, light, and made of plastic.

On the air on a good antenna it's actually a treat to use. The big beautiful backlit slide-rule dial and bandspread are clearly marked and reasonably accurate. If properly aligned, the DX-160 is a very sensitive receiver with virtually no added noise—it's very quiet. The RF gain is quite effective in that it not only affects the front-end but also the IF gain. For SSB and CW operation it has a true product detector and is very easy to tune. The only downside I ever notice is it does tend to drift. While it certainly has the sensitivity for ham QSO use, you would need to constantly tweak the bandspread to keep it on frequency over time. Not terrible but not great either.

Regardless, the DX-160 is truly iconic for a lot of hams who got their start in the 1970s and is a nice addition to any ham radio collection.

-Dave W7UUU

A World of Listening Enjoyment!
159.95
Exciting
-Band Coverage
50 to 400 kHz Longwave
35 to 1600 kHz AM Band
5 to 4.5 MHz Shortwave
5 to 13 MHz Shortwave
to 30 MHz Ham and CB
Realistic® DX-160 HAM/SWL SSB/CB Receiver
Big, exciting, professional—a "hot" performer! Hear marine/aviation weather and more on longwave; English-language shortwave programs and news from every major city around the globe; Hams and Citizens Band operators, ships at sea, Voice of America, WWV time signals plus AM stations—full coverage from 150 kHz to 30 MHz. A product detector and variable BFO assure superior SSB and CW reception, too. There are 11 front panel controls including electrical bandspread tuning for 160-10 meter Ham and CB bands, and there's shortwave conversion data in the manual. FET's in all critical stages, Zener stabilization, noise limiting in IF and audio stages, illuminated "S" meter, logging scale and a headphone jack. Receiver, 6½x14¼x9¼". Matching speaker, 7x3½x5¼".
For 120 VAC or 12 VDC neg. gnd. U.L. listed. 20-152 ..... 159.95

Pristine Realistic DX-160 receiver with SP-150 speaker from the collection of Dave W7UUU

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Homebrew & Kits corner

DC BENCH POWER SUPPLY

PROJECT PROFILE

LOW VOLTAGE DC BENCH POWER SUPPLY

by

Robert Brock, K9OSC

Experimenting and building today's solid-state devices only requires low voltages and limited amounts of current. The vast majority of projects are powered by batteries and voltages between 1.5 and 13.8 VDC. Therefore, it is very handy to have a small yet well-regulated variable power supply available when building so that circuits can be powered up as they are completed as well as when the project is finished. This power supply easily fills that need.

As constructed, the power supply was designed for bench use. The variable voltage range is 1.24 to 22 VDC at 3.0 amperes maximum. I suggest keeping closer to 2 amperes rather than pushing components to their limit. The diodes are 1N5401 rated at 100 volts at 3 amps. Amazon's cost for these diodes is a strip costing about $5.50. As a suggestion, those not having a stocked junk box from which to extract needed parts: Amazon provides very inexpensive components and easily has them delivered right to your door.

The LM317T is a durable and popular adjustable linear voltage regulator package that has been around since the 70s. Requiring relatively few external components, it is the heart of the power supply. There are almost countless circuit designs available that run the gamut from "bare bones" to "extreme" while giving essentially the same performance. This power supply is an intermediate compromise that was designed to ensure stability and durability while keeping the cost of construction at a minimum. The schematic diagram and associated parts list reveal everything needed to complete this project.

There are several variables that provide options. The output range of the LM317 varies from 1.25 to

Homebrew & Kits corner

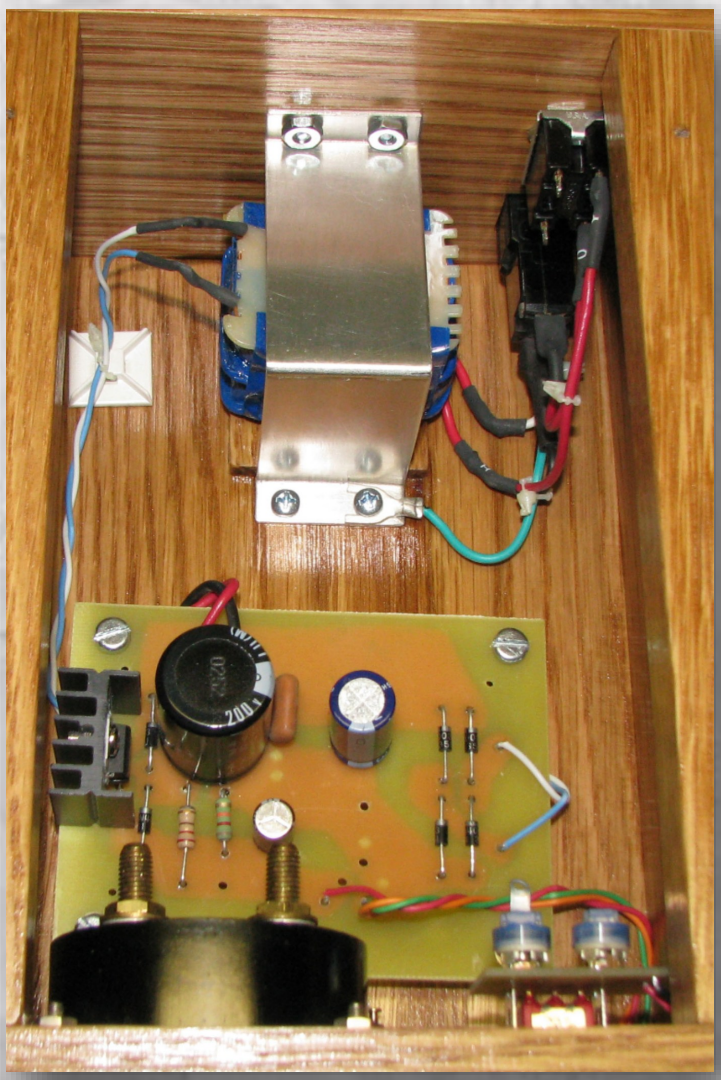
DC BENCH POWER SUPPLY

PROJECT PROFILE

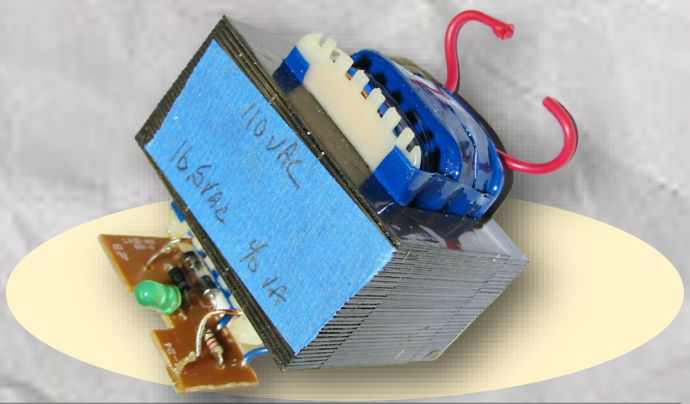
37 volts which will permit selecting various transformers depending on your voltage range needs. I have built two of these units using different transformers, one rated at 26 volts and the other at 16.5 volts. The output varied at the top end but came well within the needs required. This particular supply was built so that I could eliminate batteries on the bench and without the need to go beyond 20 VDC, while providing up to 2 amps. Substitution of transformers can be made without any changes to the circuit shown.

For this project the transformer was procured from a large AC "wall wart." I opened the molded case with a Dremel tool and a small cut-off wheel. It was easy to just penetrate the plastic case which came apart easily yielding the transformer and LED assembly, which was discarded. Note that while these transformers do not have mounting straps, they are identical to their brethren that do. Final mounting can be any method of your choice. For this project two wood strips were glued to the bottom of the cabinet where the transformer was slid into place and an aluminum bracket was made to keep the transformer securely fastened.

Heat sinking the LM317T is essential if you want to reach maximum current capacity and protect the regulator. In this case I used a salvaged aluminum finned heat sink. You can make your own with a piece of aluminum that provides enough surface area to dissipate generated heat. It is a good idea to use heat-conductive grease between the



All photos by Author



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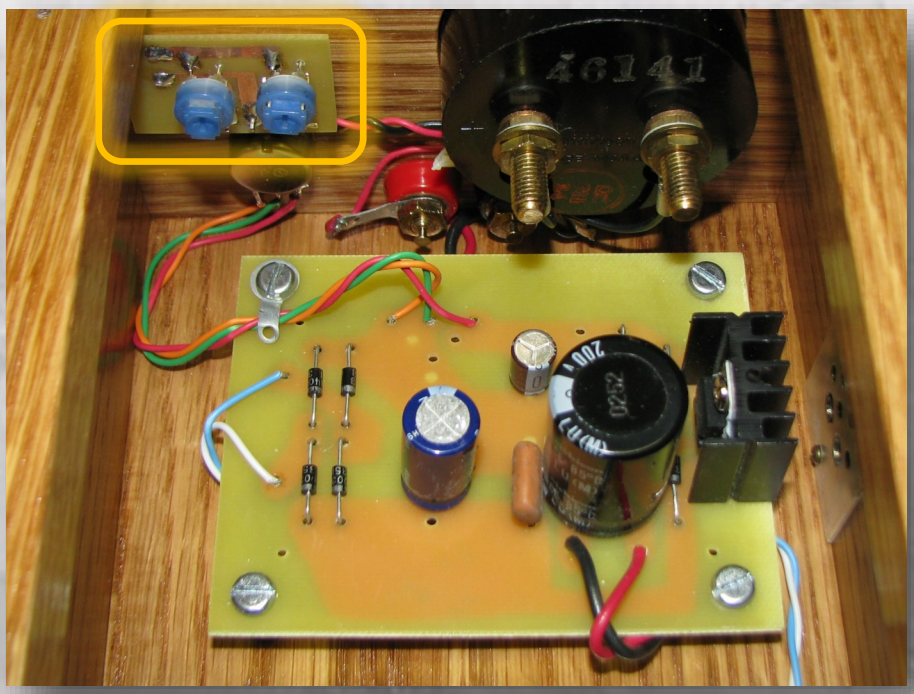
DC BENCH POWER SUPPLY

PROJECT PROFILE

regulator and heat sink. Diodes D5 and D6 provide reverse voltage protection of the LM317T should a back voltage be inadvertently introduced into the supply.

A 0–10 VDC voltmeter was selected, but you can make your own metering circuit by selecting a DC milliammeter along with a multiplier resistor. If you use a full-scale meter then the metering circuit on the schematic is not required. My first supply was rated at 30 VDC so the meter I used required an external resistor to bring it within range. However, the second time I found a 0–10 VDC Simpson meter. I wanted it to read full-scale as well as 2X-scale that would extend readings up to 20 VDC. That way I could use existing markings on the meter. In my case I found that the meter read slightly high on the original scale so I included two trim pots and now the meter reads correctly. I verified the voltages using my Fluke DVM. I etched a small PC board on which two trimmer pots and a SPDT toggle switch was mounted.



Mounting of the PC boards. Inset: the tiny PCB used to mount the trimmer pots

The DC output voltage terminates into a pair of binding posts. Robust binding posts are recommended, as they take the brunt of use and let you make temporary connections with clip leads, single wire strands, double banana plugs, etc.

The cabinet was made of red oak and measures 5.5" wide by 7.5" deep by 4.5" high. I wanted to keep the size to a minimum and I didn't want to spend the money for a metal cabinet. The wooden construction also made it easy to mount the transformer. However, use what you have available to keep the construction cost low. A small aluminum vent opening in the left side panel provides ventilation, which is a good practice. When wiring the AC components I used heat shrink tubing to keep those connections as

Homebrew & Kits corner

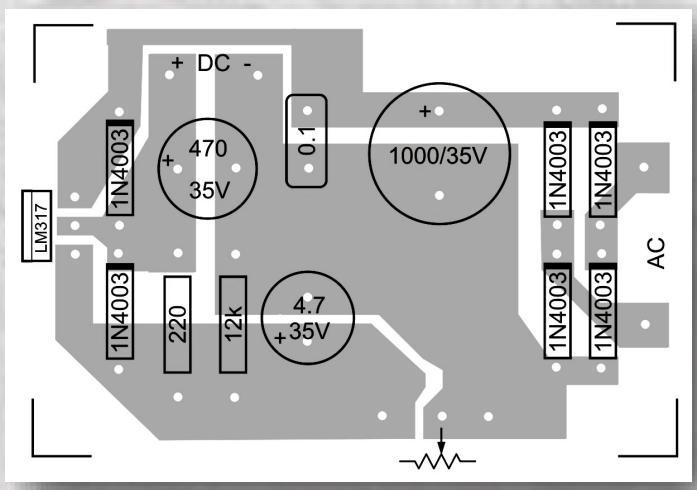
DC BENCH POWER SUPPLY

PROJECT PROFILE

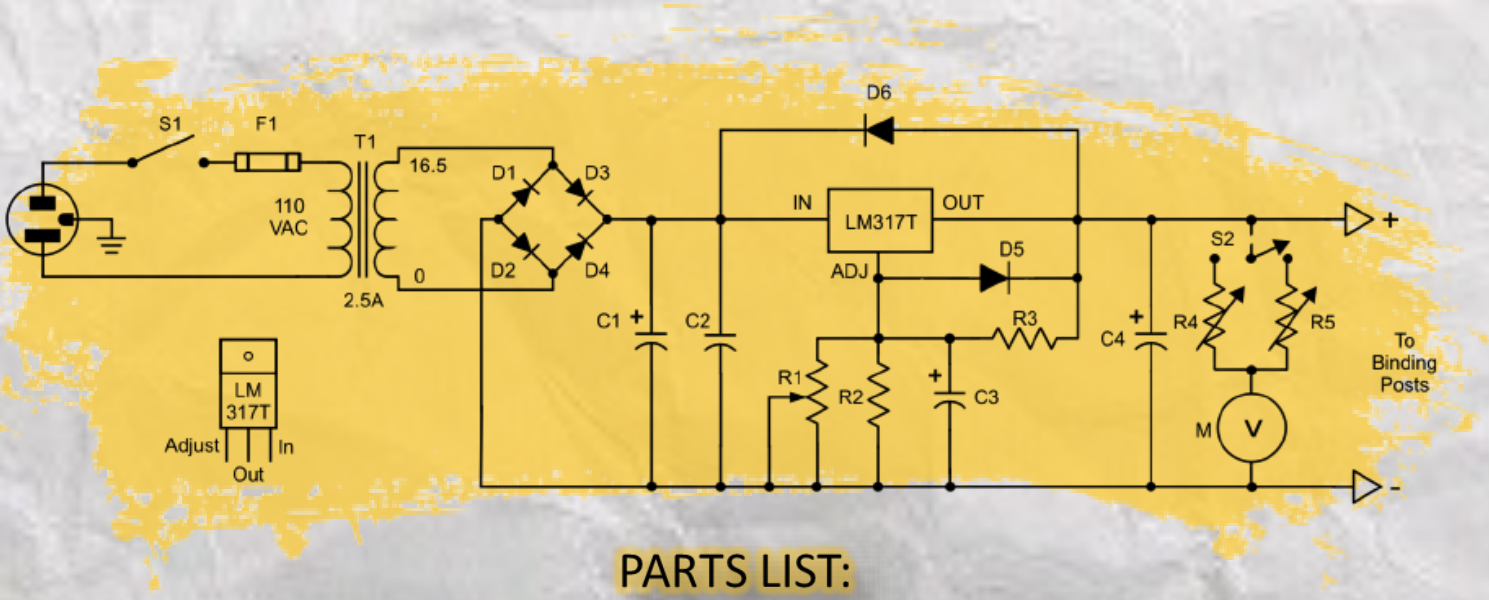
well insulated as possible. Safety first. Every panel in the cabinet is removable so that access is easily available to all internally mounted parts.

I found that this supply has given me a great deal of utility when building projects. The size is perfect for my bench and the weight of the cabinet gives it some heft so it isn't pulled around easily. I have been able to easily determine lower limit voltages for circuits to see at what point a given project will fail to work. That is great for field radios. The wide variability of voltages permits the emulation of any battery voltage as I prefer not using them on the bench. The build is easy, so give it a try.

-Robert K9OSC



Simple PC Board Layout



PARTS LIST:

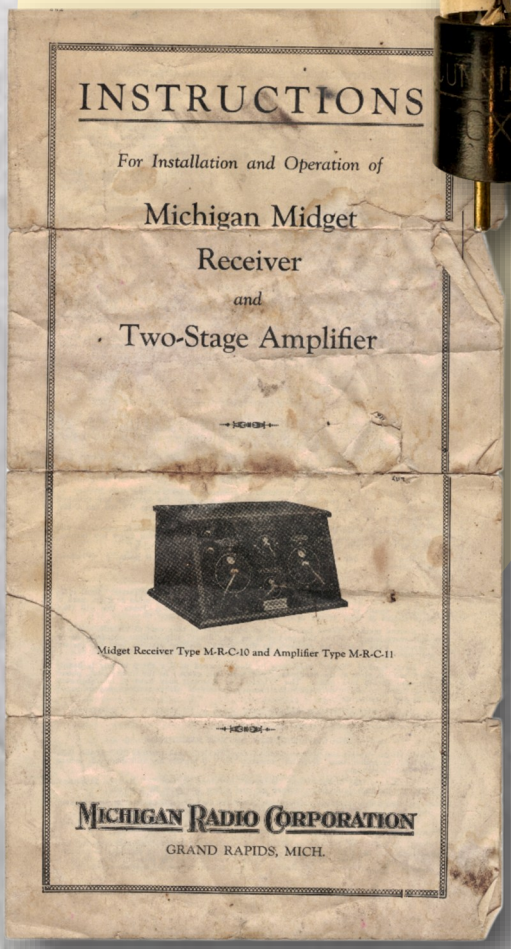
T1	-	Transformer secondary coil 16.5V 2.25A (see text)	C2	-	0.1 mfd. 35V
D1 - D6	-	1N5401 Diode 100V 3A	C3	-	4.7 mfd. Electrolytic 35V
R1	-	10K Potentiometer	C4	-	470 mfd. Electrolytic 35V
R2	-	12K Resistor	F1	-	3 amp. tubular fuse and holder
R3	-	220 ohm Resistor	M	-	0 - 10 VDC (see text)
R4, R5	-	5K and 22K (see text)	S1	-	SPST Toggle
C1	-	1000 mfd. Electrolytic 35V	S2	-	SPDT Toggle

COOL OLD RIG O'THE MONTH

Klitzen "Michigan Midget Receiver"

By Dave W7UUU

All photos by Dave W7UUU



A FEW MONTHS AGO AN INTERESTING OLD RELIC from the early days of radio came in as a donation. It was almost discarded, but one of the Property Team members handed it to me to see if I wanted to use it for a Logger's Bark article. So that's what this month's "Cool Old Rig" is about—the Klitzen-made MRC-10—Michigan Midget Receiver .

In the early 1920s, the infant radio industry was wide open, with dozens of small firms springing up across the country to meet the demand for receivers and parts. Some were large, nationally recognized names like Atwater Kent or Crosley, while others operated on a much smaller scale—often as a cottage industry. These were frequently founded and run by radio hobbyists to sell parts to their friends and radio club members. One of those was the Klitzen Radio Manufacturing Company of Racine, Wisconsin, a name that today is not really known outside of the history buffs and old radio collectors.

Klitzen was founded in Racine around 1922 by Czech immigrant Milhart Klicpera (himself a ham, with the call sign 9CM). He had been in the radio business since before World War I selling parts, but the name changed in 1922 to become the brand we know today. The Klitzen brand is a more market-friendly variant of his surname and sounded reminiscent of a big brand of radio parts at the time, Blitzen.

Unlike mega-brands RCA or Westinghouse, Klitzen never produced mass-market broadcast receivers for parlors and living rooms. Instead, its niche was building compact regenerative sets for the radio amateur and "boy experimenter" crowd, while carefully

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Klitzen "Michigan Midget Receiver"

By Dave W7UUU

operating under the Armstrong regenerative receiving apparatus patent license.

Take a look below at the license plaque attached to the receiver. That license was important: Edwin Howard Armstrong's 1914 patent on regeneration (U.S. Patent 1,113,149) was tightly controlled, and any company selling regenerative receivers needed to pay royalties to RCA (who owned the patent rights). The Klitzen nameplate itself emphasized the Armstrong license and made clear the set was "for amateur or experimental use." In other words, don't even think about mass producing zillions of radios in competition with RCA.

A clue to Klicpera's marketing strategy is that sometime around 1923 he teamed up with a Grand Rapids Michigan company called The Michigan Radio Corporation. The MRC very likely possessed a broader resale license with RCA, so Klitzen arranged to make the radios that MRC would sell, in order to skirt the "amateur use only" clause. This means that the radio I've documented for this article is possibly an original Klitzen, before the MRC collaboration began. Nowhere does the actual radio say MRC—it's only in the instruction sheet. Later models bore both names. This is merely an educated guess on my part, but it explains the name duality.

The Armstrong patent license reads:

"MANUFACTURED BY KLITZEN RADIO MFG. CO., RACINE, WISCONSIN LICENSED Under Armstrong U.S. Patent No. 1,113,149 Oct. 6, 1914, and Patent Application No. 807,386. SOLD for Amateur and Experimental Use Only. Serial No. 8882"

The most recognizable receiver made by the company was the Klitzen Midget Receiver, first branded just Klitzen but not long after, given the model number of MRC-10 to reflect the Michigan connection.

It was a single-tube regenerative tabletop set, offering respectable performance for its day. The front panel carried four controls: a large tuning capacitor knob, a regeneration control tied to the tickler coil, and a range switch for "Long Wave" vs. "Short Wave" for band coverage. Of course, these band definitions are very different than we think about today.

The long-wave position covered roughly 75 kHz to 250 kHz, while the short-wave position covered 500 kHz up to roughly 1500 kHz. At the time, that was pretty much ALL of the radio spectrum in use, and would have covered broadcast radio as well as amateur radio operators running spark. The Klitzen MRC-10 did it all!

The fourth control is a front panel filament rheostat to set tube filament brightness. This served to control electron emissions of the tube and thus vary sensitivity and gain, which helped achieve more stable regeneration. There were simple binding posts for antenna, ground, batteries, and headphones. It was, in many ways, the classic 1920s one-tube radio: elegant in its simplicity and heavily dependent on the skill of the operator to make it work.

The instruction sheet (which was tucked inside the

COOL OLD RIG O'THE MONTH

Klitzen "Michigan Midget Receiver"

By Dave W7UUU

MICHIGAN MIDGET

Detector $27 Amplifier $30

The Sensation of Radio

No matter what you pay, you can't get a receiving set that will give you any better results than the Michigan "Midget."

Distance, it has received in Grand Rapids, stations from coast to coast. *Selectivity,* the smallest turn of the dial throws out or brings in stations. *Clearness,* the clearness of the reception will surprise and please you.

The cost, you could not build a set, buying the parts yourself, at anything like the price at which the Midget is sold.

Made in these styles:
M 10 Midget Detector.....$27.00
M 11 Midget Amplifier 30.00
M 12 Midget Detector and Amplifier in one case.. 57.00

Ask your dealer to demonstrate this wonder to you.

Write us for illustrated folder

MICHIGAN RADIO CORPORATION
GRAND RAPIDS, MICHIGAN

Radio News magazine 1924 for the Klitzen / MRC Michigan Midget MRC-10 single-tube receiver (in this ad simply called the M 10). Click photo to view full-size and zoomable.

radio when I got it) called for an outdoor wire antenna—between 35 and 125 feet of No. 14 copper wire, strung 20 to 60 feet above ground. A lightning arrester was recommended on the lead-in, a precaution stressed by nearly every manufacturer of the era (for good reason). For the ground, the directions suggested driving a metal pipe or "metallic object" - whatever that means— at least six feet into the earth or connecting to a water pipe. Such advice reflected the technical needs of regen receivers—which work very poorly without a good ground. This is far more the case for regens than with modern receivers that often work just fine without any ground connection at all.

The Midget Receiver was designed to run with a single receiving triode, usually a UV-201A or its equivalents like the CX-12. In the case of this receiver, it had installed a Cunningham CX-12 (shown on the first page of this article). Filament power came from either a 5-volt "wet" (lead acid) storage battery or a set of carbon-zinc dry cells, with the front-panel rheostat providing precise filament adjustment. Plate voltage was supplied by a B battery between 22.5 and 45 volts, depending on sensitivity desired. In many cases, regenerative receivers behave in a more stable way at lower voltages.

Audio output went directly to a set of 2000-ohm headphones, the standard listening method before loudspeakers became practical for inexpensive sets. Klitzen (via MRC) did offer a 2-stage (2-triode) audio amplifier called the MRC-11 that could drive a large horn-type loudspeaker. The radio featured here did not come with the amplifier, and from my internet searches, that's a pretty rare bird. They likely didn't sell all that many.

With a decent antenna and ground, the Klitzen Midget could pull in local and regional broadcast stations, as well as spark code transmissions from early ham operators. It was not a powerhouse, but for $20 to $30 in the mid-1920s (roughly $370 to

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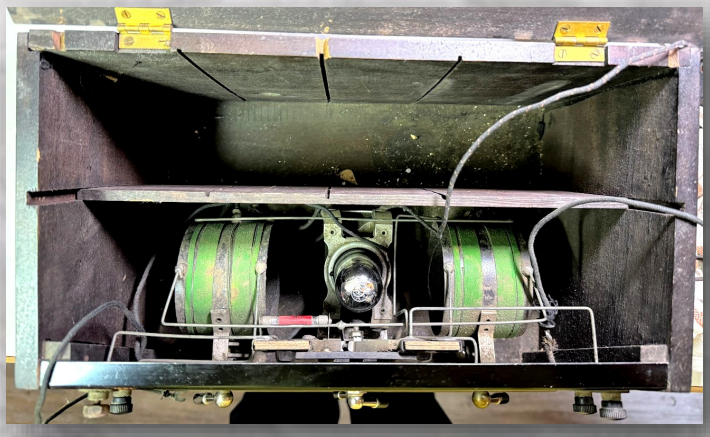
By Dave W7UUU

$570 today), it was a serious step up from crystal detectors and for the time, an affordable way into the new world of radio.

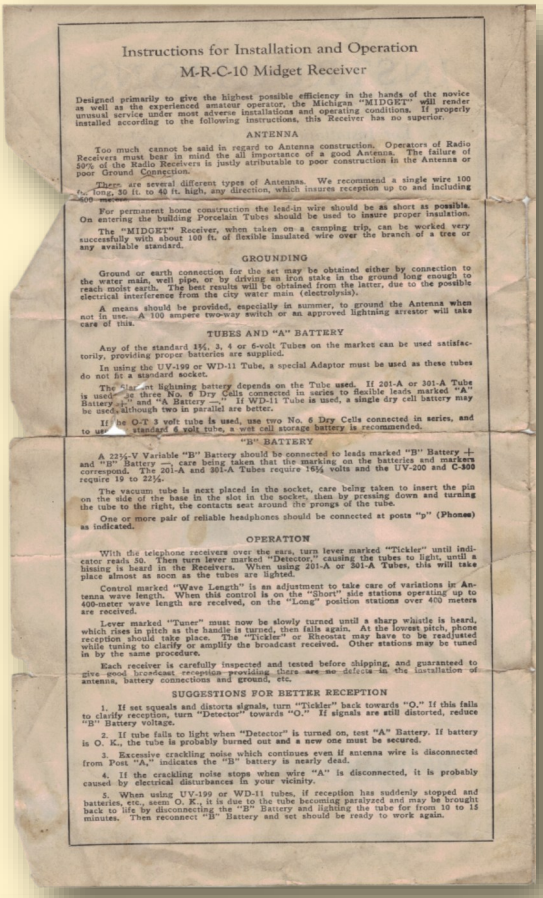
The Klitzen story also illustrates how RCA's control over patents shaped the market. Small firms could legally sell regenerative sets to amateurs, but they were excluded from the larger broadcast receiver market, which RCA and its licensees dominated. That restriction pushed companies like Klitzen into a narrow niche. For experimenters, however, the sets were attractive—legitimate, affordable, and capable enough to learn the fiddly fundamentals of tuning, regeneration, and battery management.

I hope to get this neat old receiver up and operating soon and hopefully have it on display in the museum.

-Dave W7UUU



Inside view of the Klitzen receiver. The single CX-12 tube is in the center. The green coil on the left is the tickler and the coil on the right is the tuning coil. Both are variometer types.



Instructions for Installation and Operation
M-R-C-10 Midget Receiver

Designed primarily to give the highest possible efficiency in the hands of the novice as well as the experienced amateur operator, the Michigan "MIDGET" will render unusual service under most adverse installations and operating conditions. If properly installed according to the following instructions, this Receiver has no superior.

ANTENNA

Too much cannot be said in regard to Antenna construction. Operators of Radio Receivers must bear in mind the all importance of a good Antenna. The failure of 50% of the Radio Receivers is justly attributable to poor construction in the Antenna or poor Ground Connection.

There are several different types of Antennas. We recommend a single wire 100 ft. long, 30 ft. to 40 ft. high, any direction, which insures reception up to and including 600 meters.

For permanent home construction the lead-in wire should be as short as possible. On entering the building Porcelain Tubes should be used to insure proper insulation.

The "MIDGET" Receiver, when taken on a camping trip, can be worked very successfully with about 100 ft. of flexible insulated wire over the branch of a tree or any available standard.

GROUNDING

Ground or earth connection for the set may be obtained either by connection to the water main, well pipe, or by driving an iron stake in the ground long enough to reach moist earth. The best results will be obtained from the latter, due to the possible electrical interference from the city water main (electrolysis).

A means should be provided, especially in summer, to ground the Antenna when not in use. A 100 ampere two-way switch or an approved lightning arrestor will take care of this.

TUBES AND "A" BATTERY

Any of the standard 1¼, 3, 4 or 6-volt Tubes on the market can be used satisfactorily, providing proper batteries are supplied.

In using the UV-199 or WD-11 Tube, a special Adaptor must be used as these tubes do not fit a standard socket.

The "A" battery lighting battery depends on the Tube used. If 201-A or 301-A Tube is used, 3 to three No. 6 Dry Cells connected in series to flexible leads marked "A" Battery +" and "A Battery —." If WD-11 Tube is used, a single dry cell battery may be used, although two in parallel are better.

If the C-3 volt tube is used, use two No. 6 Dry Cells connected in series, and to use standard 6 volt tube, a wet cell storage battery is recommended.

"B" BATTERY

A 22½-V Variable "B" Battery should be connected to leads marked "B" Battery +" and "B" Battery —, care being taken that the marking on the batteries and markers correspond. The 201-A and 301-A Tubes require 16½ volts and the UV-200 and C-300 require 19 to 22½.

The vacuum tube is next placed in the socket, care being taken to insert the pin on the side of the base in the slot in the socket, then by pressing down and turning the tube to the right, the contacts seat around the prongs of the tube.

One or more pair of reliable headphones should be connected at posts "P" (Phones) as indicated.

OPERATION

With the telephone receivers over the ears, turn lever marked "Tickler" until indicator reads 50. Then turn lever marked "Detector," causing the tubes to light, until a hissing is heard in the Receivers. When using 201-A or 301-A Tubes, this will take place almost as soon as the tubes are lighted.

Control marked "Wave Length" is an adjustment to take care of variations in Antenna wave length. When this control is on the "Short" side stations operating up to 400-meter wave length are received, on the "Long" position stations over 400 meters are received.

Lever marked "Tuner" must now be slowly turned until a sharp whistle is heard, which rises in pitch as the handle is turned, then falls again. At the lowest pitch, phone reception should take place. The "Tickler" or Rheostat may have to be readjusted while tuning to clarify or amplify the broadcast received. Other stations may be tuned in by the same procedure.

Each receiver is carefully inspected and tested before shipping, and guaranteed to give good broadcast reception providing there are no defects in the installation of antenna, battery connections and ground, etc.

SUGGESTIONS FOR BETTER RECEPTION

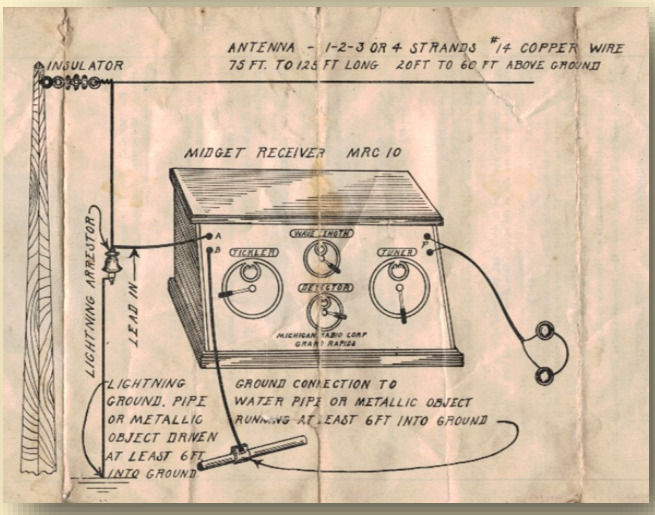
1. If set squeals and distorts signals, turn "Tickler" back towards "O." If this fails to clarify reception, turn "Detector" towards "O." If signals are still distorted, reduce "B" Battery voltage.

2. If tube fails to light when "Detector" is turned on, test "A" Battery. If battery is O. K., the tube is probably burned out and a new one must be secured.

3. Excessive crackling noise which continues even if antenna wire is disconnected from Post "A," indicates the "B" battery is nearly dead.

4. If the crackling noise stops when wire "A" is disconnected, it is probably caused by electrical disturbances in your vicinity.

5. When using UV-199 or WD-11 tubes, if reception has suddenly stopped and batteries, etc., seem O. K., it is due to the tube becoming paralyzed and may be brought back to life by disconnecting the "B" Battery and lighting the tube for from 10 to 15 minutes. Then reconnect "B" Battery and set should be ready to work again.


ANTENNA - 1-2-3 OR 4 STRANDS #14 COPPER WIRE
75 FT. TO 125 FT LONG 20FT TO 60 FT ABOVE GROUND
INSULATOR
MIDGET RECEIVER MRC 10
LIGHTNING ARRESTOR
LEAD IN
TICKLER
TUNER
DETECTOR
LIGHTNING GROUND. PIPE OR METALLIC OBJECT DRIVEN AT LEAST 6FT INTO GROUND
GROUND CONNECTION TO WATER PIPE OR METALLIC OBJECT RUNNING AT LEAST 6FT INTO GROUND

Klitzen MRC-10 instructions manual. To see full-size and zoomable simply right click > open new tab.

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CLASSIC EXCHANGE 2025 CW!

W7OS Museum Station / Randy WB4SPB station

The Classic Exchange, often called "CX," is a nostalgic amateur radio operating event that celebrates the use of vintage equipment. Hams dust off their classic transmitters, receivers, and transceivers—some dating back decades—and get on the air to make friendly contacts. There are two separate sessions each year: one for CW operation and another for SSB. The focus is on sharing the fun of old gear. While there is a scoring system, it's really just a "for fun" sort of thing… points being granted based on things like number of tubes in play, or as in this fall's CW event, the use of certain brands of gear for a bonus. This time it was World Radio Labs "Globe Scout" bonus. So W7OS Museum operators Dan KD7SV and Randy WB4SPB rejiggered the secondary operating position to set up a Globe Scout transmitter driven by a Heathkit VF-1 VO with a Collins 388/URR receiver.

(Below) At home, Randy WB4SPB fired up his great old Drake line—R-4B receiver and T-4X transmitter. Even

the upended Ten-Tec Century ONE low-power (but not QRP!) transceiver was part of the action. For fans of the old tube gear, and especially fans of CW, the Classic Exchange events are always something to look forward to.

-Dave W7UUU

CLASSIC EXCHANGE 2025 CW!

W7OS Museum Station / Randy WB4SPB station

In the W7OS museum, Mike W7XTZ is all smiles making Classic Exchange SSB contacts using the great old Drake TR4 transceiver in the secondary operation position.

The week following the Classic Exchange CW event brings the Phone edition, which can be every bit as much fun as the Morse version. With so many classic AM and SSB rigs from the past, this part of the event opens the door to a whole new group of operators. Hams who don't have Morse skills—or simply prefer voice operation—can jump right in and enjoy the same spirit of vintage operating. All that's really needed is a classic phone transceiver, or a separate transmitter and receiver setup, and a desire to relive the golden days of radio by getting that old gear on the air and making contacts the way it used to be done.

-Dave W7UUU

In the third operating position working the event is Museum Curator Dan KD7SV. He's making contacts on the old Heathkit HW-32 20-meter monoband SSB transceiver using a classic Astatic D-104 Hi-Z microphone just like the old day.

In the primary operating position in the W7OS Museum is the Massive Hallicrafters HT-32A CW/SSB transmitter from 1958, running a full 100 watts on SSB. It's paired with a Drake R4-C receiver for a really great vintage lineup.

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CLASSIC EXCHANGE 2025 CW!

Rich KR7W Station

Photos by Rich KR7W

Rich KR7W from Idaho sent in pictures of his two Classic Exchange CW operating setups. At left is the Elmac A54 transmitter (powered by the matching power supply), and the receiver is a Drake 2B. The Elmac rig was designed as a mobile transmitter around 1952—imagine that, paired with a receiver, in the front seat of your car! Below is his second CX station—a homebrew 807 transmitter (20 watts output) driven by a Heathkit VF-1 VFO. Receiver is the Elmac PMR-6 (shown larger in the inset) that was featured in the October 2025 issue of The Logger's Bark, that Rich restored from being a rust bucket.

-Dave W7UUU

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by Steve KW4H
GRIOT'S
GARAGE
PERFECTING CREAM
FOR REFINING AND ENHANCING GLOSS
16 fl.oz. / 473 ml
BOSS | BEST OF SHOW SYSTEM™
CAUTION! MAY CAUSE SKIN AND EYE IRRITATION.
Bringing Back the Shine
RESELECTOR
FREQUENCY
POWER
OFF
CAL
OFF
STBY
RCV
S. AVC
F. AVC
NL
OFF
PROD
DIODE
BFO
OFF
RF GAIN
PASSBAND
AF GAIN
BAND
MODEL 2-B COMMUNICATION RECEIVER
CO-MIAMISBURG OHIO

Bringing Back the Shine

by Steve KW4H

By Steve Reed, KW4H

CHASSIS RESTORATION—BRINGING BACK THE SHINE & THE FINE ART OF NOT OVERDOING IT

There's something quietly satisfying about bringing an old radio back from years of neglect — not only by restoring it electrically, but by bringing out its original shine. A painted metal cabinet or chassis, dulled by decades of dust, nicotine, or basement rust, can look hopeless at first glance. But underneath, the original finish often survives — tired, yes, but intact and worth saving.

1965 Drake 2B / 2BQ receiver in bad need of cabinet restoration. Photo: Steve KW4H

The key is restraint. You can't rush metal back to respectability with brute force or harsh chemicals. Every product and technique has its place, and *most of the craft lies in knowing when not to use them*. With patience and the right touch, a chassis or cabinet can be cleaned, brightened, and protected without losing its age or authenticity.

After years at the bench, I've come to rely on a short list of dependable cleaners and gentle methods that respect the original paint, the lettering, and the story behind each set. Much of what I've learned didn't come from the radio bench at all, but from years of detailing my own cars — which, after all, are painted metal too. Many of the same principles apply: start with the *mildest* cleaner that will do the job, use the right technique for the surface, and always work with the goal of preserving rather than replacing.

The metalwork in vintage amateur radio gear usually falls into three categories: bare aluminum, bare steel, and painted metal surfaces. Each demands a different approach when it comes to cleaning and preservation. Using the wrong chemical on the wrong surface can undo decades of history in seconds — so it pays to understand what you're working with before picking up a brush or bottle.

Bare Aluminum: Aluminum is light, strong, and corrosion-resistant — but easy to damage with the wrong cleaner. When exposed to air, it forms a thin oxide film that protects it from further corrosion. That film gives it a soft, matte appearance — the "factory look" that restorers should preserve. Use mild cleaners, such as isopropyl alcohol, naphtha, or a weak solution of dish detergent in water. These safely lift grease, dust, and fingerprints without attacking the oxide layer.

Bringing Back the Shine

by Steve KW4H

Avoid anything alkaline or caustic — oven cleaner, bathroom foams, "all-purpose degreasers," or ammonia. Abrasives like steel wool or Scotch-Brite should also stay off the list; they scratch easily and alter the surface texture. If you must brighten a badly oxidized area, a small amount of metal polish applied briefly and removed immediately can work — but the goal isn't a mirror finish. Clean and uniform always beats shiny and artificial.

Bare Steel: Many early and mid-century radios used steel chassis plated with cadmium, zinc, or nickel to resist rust. These finishes age differently, sometimes dulling to a gray film or showing small rust blooms at the edges. Cleaning them is a balancing act between removing corrosion and preserving plating.

Start with 99% isopropyl alcohol or naphtha for general grime. For light rust, a rust remover can work when applied locally with a brush or swab — never as a soak. When extra power is needed for baked-on dirt or nicotine residue, a quick application of Scrubbing Bubbles (on bare steel only — never on aluminum or painted surfaces) can lift grime. Rinse thoroughly and dry immediately. Avoid acids, strong alkalis, bleach, or aggressive mechanical cleaning — they'll strip plating down to bare steel and invite rust.

Painted Metal: Painted surfaces — usually steel cabinets and aluminum or steel front panels — are the most visible part of a radio and easiest to ruin. Decades-old enamel or lacquer can look sturdy but may soften or craze instantly under the wrong solvent. Warm water with a drop or two of dish soap removes most dirt safely. For greasy residue or nicotine film, naphtha or mineral spirits on a soft cloth usually works without affecting old paint.

WARNINGS:

Avoid anything labeled "degreaser," "all-purpose cleaner," or "bathroom cleaner." They are typically high in alkalinity and can dull or lift the paint within seconds.

Avoid ammonia, acetone, or alcohol on printed or silkscreened lettering — they'll remove it faster than you realize. Work patiently around decals or thin paint edges; once original paint is gone, it's gone.

OVER TIME, I'VE SETTLED ON A SHORT LIST OF DEPENDABLE SUPPLIES THAT EARN A PERMANENT PLACE ON MY BENCH.

Used with care, they lift oxidation, remove grime, and bring back the soft, original sheen of the finish without altering age or character.

LA's Totally Awesome Cleaner: Diluted roughly one part cleaner to ten parts water, this product strikes an ideal balance between cleaning power and safety. Applied with a soft cloth or foam swab, it wets the surface evenly and releases grime almost immediately. After a short dwell —

Bringing Back the Shine

by Steve KW4H

usually less than a minute — a wipe and rinse with clean water (or a follow-up with isopropyl alcohol) leaves the metal clean and residue-free. In this dilution, it works equally well on aluminum, steel, and painted panels when handled with care.

Scrubbing Bubbles: When a chassis is coated with decades of oily grime or nicotine residue, mild cleaners often won't touch it. Used carefully *on bare steel only*, a short application lifts dirt without scrubbing. Apply, wait 10–15 seconds, then remove with a soft cloth or toothbrush for stubborn spots. Wipe thoroughly with water or isopropyl alcohol and dry completely.

Wenol Metal Polish: Mild abrasives suspended in a chemical cleaner, Wenol brightens surfaces and removes light tarnish. I use it only on bare metal — steel, nickel, or aluminum — and sparingly. On plated steel, a small dab applied lightly and wiped off immediately keeps the finish clean and uniform. On aluminum, brief polishing evens oxidation, but overdoing it removes the natural oxide layer, creating an unnatural mirror finish.

Griot's Garage Perfecting Cream: For painted panels or cabinets, Perfecting Cream is gentle enough for older enamels and lacquers. A small amount worked lightly in circular motions with a microfiber or foam pad lifts oxidation, evens color, and restores a smooth, natural sheen. Buff with a clean microfiber towel for a refreshed, uniform look.

Griot's Garage Correcting Cream: When paint is heavily oxidized or scratched, Correcting Cream, a mild abrasive, removes stubborn oxidation and levels minor defects. Applied by hand in short sections, it exposes healthy paint without leaving swirl marks. Often, following it with Perfecting Cream refines the finish and restores a soft, authentic luster.

Griot's Garage Finishing Sealant: After polishing, I seal the surface with Finishing Sealant. It bonds to paint, protecting against moisture, fingerprints, and oxidation, without yellowing or leaving chalky residue. Spread thin with a soft cloth, then buff. The surface feels slick but looks natural, preserving the results and making future cleaning easier.

Photos: Amazon.com (no affiliation)

All products available on Amazon etc. click photos to view

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Bringing Back the Shine

by Steve KW4H

CLOSING COMMENTS

These products have earned a place on my bench over time, but they are not the only options. Every restorer develops a personal chemistry built on trial, caution, and hard-learned lessons. What matters isn't the brand, but how you use it and the respect shown for the materials.

There's no single recipe that works for every chassis or cabinet.

Fully restored Drake 2B / 2BQ. Electrical restoration was done first—now the cabinet has been fully restored to as-new condition. Photo by Steve KW4H

Some radios respond beautifully to a light polish; others look better when you stop short and leave a trace of age. The goal isn't perfection — it's authenticity. When finished, a radio should look as it did leaving the factory: clean, cared for, and honest.

Overdoing it might make it shinier, but it erases history — and that's something you can never get back. A few nicks and scratches are better than an overdone, inauthentic finish.

Experiment with care. Test cleaners on hidden spots before committing. Start mild and move up only when necessary. Learn to read the surface — sometimes the metal itself will show when it's had enough.

There's great satisfaction in bringing an old piece of gear back to life, not by transforming it, but by revealing what was always there. With patience, the right touch, and respect for original craftsmanship, you can reproduce the look and feel the manufacturer intended — keeping radios proudly authentic for years to come.

And – finally – always work in a well-ventilated area, wear gloves and eye protection when using potentially harmful chemical cleaners, and *never* mix cleaning products.

-Steve KW4H

Bringing Back the Shine

by Steve KW4H

PRINT THIS BENCH CARD — "BRINGING BACK THE SHINE"

By Steve Reed, KW4H

Surface type → Cleaner / Product → Key steps

BARE ALUMINUM → Isopropyl alcohol, naphtha, or weak dish soap solution → Lift grease, dust, fingerprints. Use a soft cloth; preserve the natural oxide film (matte finish).
Avoid: Alkaline/caustic cleaners (oven cleaner, bath foams, all-purpose degreasers), ammonia, abrasives like steel wool or Scotch-Brite. If badly oxidized: a quick dab of metal polish, then remove immediately. Goal is clean/uniform, not mirror finish.

BARE STEEL (plated) → Isopropyl alcohol or naphtha for general grime. For light rust: rust remover applied locally (brush/swab) — never soak. For heavy baked-on grime: short use of Scrubbing Bubbles (bare steel only) → wait 10-15 seconds, wipe, rinse thoroughly, dry immediately.
Avoid: Acid, strong alkalis, bleach, or coarse abrasives — they remove plating down to bare steel and invite rust.

PAINTED METAL (enamel/lacquer on steel or aluminum front panels) → Warm water + a drop or two dish soap for most dirt. For greasy/nicotine film: naphtha or mineral spirits on soft cloth.
Avoid: Products labeled "degreaser," "all-purpose cleaner," or "bathroom cleaner." Avoid ammonia, acetone, or alcohol on printed/silkscreened lettering. Use patience around decals/thin paint edges.

Key Products & Usage Ladder

LA's Totally Awesome Cleaner (1:10 dilution) → Mild, safe cleaner. Apply with soft cloth or foam swab, short dwell (<1 min), wipe and rinse. Works on aluminum, steel, and painted surfaces when used gently.

Scrubbing Bubbles → For bare steel only with heavy grime. Apply, wait 10-15 sec, wipe with cloth or toothbrush, rinse thoroughly, dry completely.

Wenol Metal Polish → Mild abrasive cleaner. Use sparingly on bare metal (steel, nickel, aluminum). On plated steel: small dab, rub lightly, wipe off. On aluminum: conservative use — avoid removing oxide layer.

Griot's Garage Perfecting Cream → For painted panels/cabinets. Apply lightly with microfiber pad, circular motion, buff clean. Restores natural gloss safely.

Griot's Garage Correcting Cream → For oxidized or scratched paint. Hand-apply with microfiber pad, short sections, buff. Optionally follow with Perfecting Cream.

Griot's Garage Finishing Sealant → Final protective step. Apply thinly with soft cloth, let haze, buff clean. Protects against moisture, fingerprints, oxidation. Leaves natural finish.

General Rules & Tips

- Always test cleaner on a hidden spot first.
- Begin with mildest approach, move up only when needed.
- Read the surface — stop when it looks right.
- Preserve authenticity, not perfection.
- A few nicks and scratches are better than over-polish.
- Work in a ventilated area, wear gloves/eye protection, *never* mix cleaning products

ALWAYS confirm product specifications before using

ONE HUNDRED YEARS AGO THIS MONTH, in December 1925, Radio Age magazine introduced its "Model H" receiver—a five-tube straight R.F. set designed to balance simplicity, performance, and accessibility for the home constructor. Unlike commercial offerings of the day, this receiver was built step-by-step following detailed instructions in the article itself. Measurement of every hole and solder connection is covered in fine detail to be easy to build.

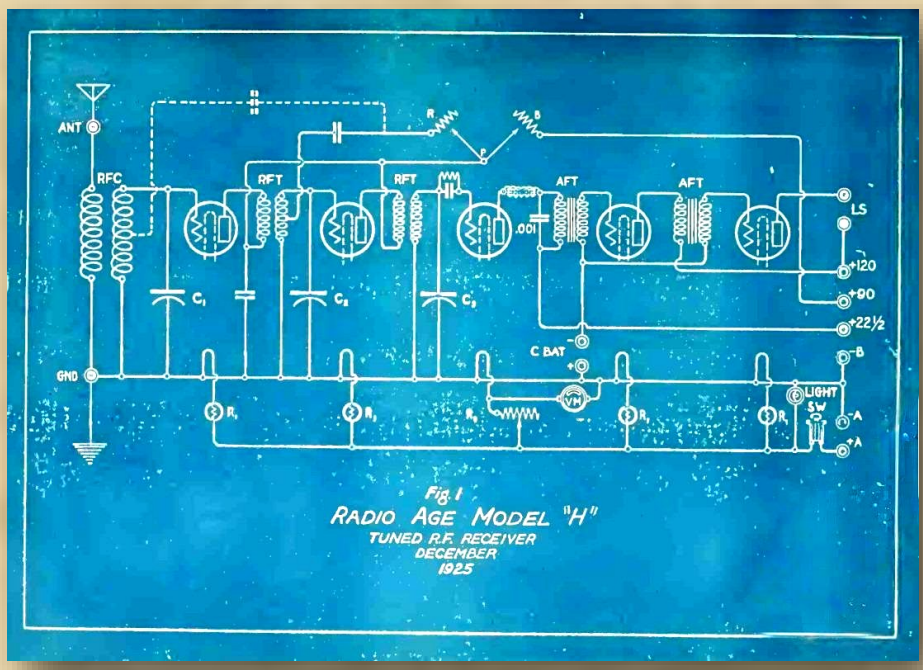

Fig. 1
RADIO AGE MODEL "H"
TUNED R.F. RECEIVER
DECEMBER
1925

The Model H employed straight radio-frequency amplification with adjustable regeneration for stability and sensitivity—qualities that made it a reliable performer for both experimenters and everyday listeners. The design called for familiar parts of the era, including Silver-Marshall variable condensers, Henninger R.F. transformers, and Benjamin Cle-Ra-Tone sockets, all mounted on a 7-by-26-inch Bakelite panel over a pine baseboard. Though methodical and precise, the construction wasn't overly difficult; careful layout, clean wiring, and patience were the main ingredients. This was typical of the DIY "hookup" construction projects Radio Age magazine was well known for.

RADIO AGE
The Magazine of the Hour
M. B. Smith, Business Manager — A Monthly Publication Devoted to Practical Radio — Frederick A. Smith, Editor

An R. F. Receiver You Can Rely On—
The Radio Age MODEL Receiver

By Radio Age Technical Staff

Latest Refinements Added to Furnish Distance an

Blueprint Section Every Month
RADIO AGE
The Magazine of the Hour
December 1925
25¢
Radio Age Model Receiver
In this Issue

Builders were guided through drilling, mounting, and wiring with enough practical detail to make the project approachable even for the less experienced builder. When completed, the Model H was described as offering strong reception and good tone quality—a solid performer that embodied the do-it-yourself spirit of those early days of radio. Radio Age proudly displayed the finished set at the Chicago Radio Show, celebrating it as a "receiver you can rely on."

If you would like to read the full article, simply click on any of the images to the right to be taken to the Archive of Radio Age for the December 1925 issue.

-Dave W7UUU

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email loggersbark@gmail.com

Plan Now: Upcoming POTA!

By BJ KO7T

RADIO CLUB OF TACOMA POTA 2025 Schedule

This past year, the club hosted 11 POTA activations at 7 different parks, and we have BIG plans for 2025!

The Club's POTA Chairman, BJ KO7T, is always looking ahead for fun new parks in the state to activate. It's always a great way for members to get involved with amateur radio while enjoying the great outdoors here in Washington State!

Here's the upcoming schedule:

DATE: December
TIMES: N/A
NOTES: Due to the Holiday Season and the W7DK Holiday Banquet, there will not be a POTA activation for December. But see you in January!!

Everyone is invited to come to our POTA activation events. It's a great opportunity to learn about different antenna types, setting up and tuning antennas with loading coils and/or a counterpoise, learn about different digital modes, and other topics related to portable operations. We usually have 3 to 5 stations set up running many modes on multiple bands. We encourage prospective hams to get on the air, and those with Technician licenses to operate on different bands with a control operator. For club members with a General license, we even have a portable POTA kit that is available to check out from the club the Saturday prior to our club activations. Please see or email BJ Rollison (KO7T) for more information.

-BJ KO7T

BJ KO7T operating at a recent POTA activation

Recently Lynn WR7G led a group from the Burley (WA) Radio Club, W7JQ, for their first-ever POTA outing. Manchester State Park in the Port Orchard area is a wonderful place for POTA activations most any time of the year. There are sunny open areas, shaded woodsy areas, and plenty of covered spots including a WWI era "Torpedo storage building" with the torpedo control room (the white concrete structure below) among the nooks available to set up in.

The primary rig was the club's Icom IC-7300 into a portable vertical antenna, among other QRP rigs and antenna options. In just under an hour of operating, 17 SSB contacts were made on 20-meters, with each member sharing in the fun (a first time for all).

Lynn WR7G and Wayne KF7SOV are both years-long members of the Radio Club of Tacoma as well (member numbers 2039 and 2536 respectively). Dana Ellis KM7ANF is a brand new ham, having earned his license this past spring—so everything radio is new to him. What a great way to get started—a POTA activity in a beautiful historic park!

Afterwards, the group had a barbeque and talked shop until it was time to load out and think about the next adventure.

-Dave W7UUU

Photos by Dave W7UUU

POTA / SOTA

Parks & Summits on the Air Activities

By BJ K07T

John N7TES arranged a RCT Club POTA event at the beautiful Illahee State Park (US-3202) in East Bremerton, Washington. The park covers 82 wooded acres rich with old-growth and "second growth((1860s) Douglas fir trees. The NE beach area has a great view to the north and east, which can make for amazing cross-country U.S. contacts, as well as over-the-pole access when the Gods of Propagation are on your side.

John set up in a picnic shed above the beach, with a great view to the NE. With him were Kathryn K7USR and Cathi W6PSY. John's rig was his very handsome and functional Icom IC-705 (10 watts) in a W2HVH.com carry case and "go box" frame. The antenna in use was a Chameleon CHA MPAS 2.0 vertical.

He operated as W7DK, and as operator N7TES (his personal call sign). Conditions were not great—the only viable mode that day was FT8 on 20-meters, where John picked up 13 contacts—enough to qualify the activation.

Cathi W6PSY didn't have as much luck, working SSB and netted no contacts (running QRP to a vertical).

Regardless, it was a beautiful morning in a wonderful park. Anne N7ANN I stopped by for a vote of confidence and to take a few photos of the event.

-Dave W7UUU

Photo by: Dyknowsore via Wikipedia

STRAY TOPICS OF INTEREST

Fun stuff for Hams to read!

W7UUU

Cool New ARRL Award

This past summer, the ARRL introduced the new DXCC Trident Award—for confirming 100 DXCC entities on each mode group: CW, Phone, and Digital. Unlike the Triple Play launched in 2016 (W.A.S. on all three mode groups), the Trident award works *retroactively*—so it's possible you may have already earned it!

But if you're a mode snob ("I have a microphone around here somewhere", "CW is for dinosaurs", "Digital is just computers talking to computers") then you will have no chance to hang this beauty on your wall!.

It's a great new award and I'm honored to have earned it.

-Dave W7UUU

Famous Ham October Birthdays

THIS MONTH'S FEATURED HAM RADIO BIRTHDAY IS James Ricks W9TO (SK 2001), born December 1913. Ricks was an electrical engineer for Motorola and is best known as the inventor of the first digital Morse keyer for amateur radio use. Ricks filed U.S. Patent 3,041,397, "Telegraphic Keyer," on April 22, 1960, and the patent was granted on June 26, 1962. He sold the patent (pending) to Hallicrafters in late 1960 which very quickly resulted in the HA-1 "T.O. Keyer"—the T.O. being an homage to his call sign, W9TO. Ricks was a long-time high-speed Morse operator and wanted a more reliable keying system for higher speeds than could be achieved by many hams at the time.

Ricks founded a group dedicated to high-speed CW operation called the Chicken Fat Operators club, CFO for short. He was member #1 and is quoted as calling the CFO "the ultimate disorganization". At the time of his passing, he was living in a retirement community in the Seattle area.

-Dave W7UUU

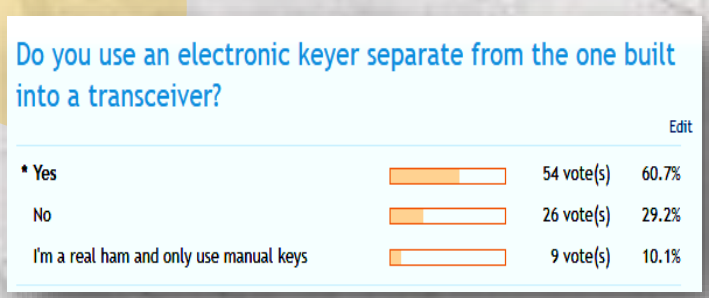
James Ricks W9TO—Inventor of the HA-1 keyer

STRAY TOPICS OF INTEREST

Survey Center & QSL of the Month

W7UUU

Survey Center!


Do you use an electronic keyer separate from the one built into a transceiver?
Edit
* Yes 54 vote(s) 60.7%
No 26 vote(s) 29.2%
I'm a real ham and only use manual keys 9 vote(s) 10.1%

Since this issue touches quite a bit on Morse keyers, it seems fitting to feature a survey regarding keyer use among QRZ forums users. Not a scientific survey—but still interesting. 60% of respondents report still using an external keying device apart from their transceiver… myself being one of them (I own many keyers)… keyers in modern transceivers are pretty good these days but there are often features that can only be achieved using an external system such as N1MM or N3FJP logging software, or the K1EL USB keying interface. And of course many, myself included, enjoy using vintage tube and solid-state keyers just for their own sake. Lastly, the ever-present smug crowd that are "real hams" and only use manual keys (I have plenty of those as well). It's usually this same crowd who smugly say, "Oh I have a microphone around here somewhere—I think it's in a drawer".

-Dave W7UUU

QSL Card of the Month

One of my treasured QSL cards—RI1ANC from Vostok Base, Antarctica. Alex (RD1AV) was the operator (show above) and was Chief of the base and radio operator between December 2013 and February 2015. I worked him on 20-meter CW in July of 2014—his signal was extremely fluttery due to the many hops between the south pole and Washington state. I've worked Antarctica other times, but the first is often the best.

-Dave W7UUU

Anne N7ANN suggested that for my last issue as Logger's Bark Editor that I should be the "Shack of the Month" so here I am! I was first licensed December 1974 as WN7AWK, got my General in '75 as WB7AWK, and my Extra in June 1997. I changed to W7UUU in December 2012. I work pretty much all modes: CW, SSB, Digital, and most everything in between. Many of my rigs are vintage boat anchors, but for contesting and working DX, I run a Yaesu FTDX-101MP transceiver, Elecraft KPA1500 amplifier, and a SteppIR DB18E up about 70 feet on my tower behind the shack. I've been a member of the Radio Club of Tacoma since August, 1975 (#743) and over the years have held a fair number of committee and officer positions including two terms as President (2016-2020). I've just been elected to the Board to begin serving in 2026. I've been the Editor of The Bark since the January 2024 issue, and this is the last of my 2-year commitment—24 issues ending with December 2025. It's been a fun project and I very much look forward to seeing what sorts of things the next Bark editor will bring to the table. *-Dave W7UUU*

W7OS DOC SPIKE MUSEUM

Featured Gear from the Museum

Photos & Text by Dave W7UUU

THIS MONTH'S W7OS MUSEUM PIECE IS A TIE-IN TO THE larger article in this issue covering many different types of electronic keyers sold to hams over decades. In this case, it's a piece from my own keyer collection, but it's identical to the one that sits on the main operating desk of the Museum.

Electronic keyers have been around for a long time—a part of the evolution from straight keys to semi-automatic "bug" keys to electronic keyers, all the way to the modern era with sophisticated computer-controlled keyers. The keyer featured here is really one of the icons: the Hallicrafters T.O. Keyer.

Hallicrafters HA-1 T.O. Keyer similar to the one in the W7OS Museum. From the collection of Dave W7UUU

When Hallicrafters introduced the HA-1 in 1960 for $79.95, they weren't merely selling a keyer—they were offering one of the first digitally-based Morse keyers ever made available to hams. Adjusted for inflation, that $79.95 equates to roughly $800 to $900 today, making it a substantial investment for a piece of station equipment at the time.

The HA-1 represented a big break from earlier electronic speed keys that had preceded it. All prior such devices (including plans in The ARRL Handbook and QST for homebrew keyers) were analog in design. They used RC timing networks to create the streams of dits and dahs. The HA-1 was different. It was fully digital, using flip-flop gates just like the tube-based computers of the era. Its very clean, stable timing gave even ordinary operators a professional-sounding signal, and its rugged relay output allowed it to key virtually any transmitter of the period, up to 500 volts on the keying line.

The name "T.O." traces to James B. Ricks, W9TO, an engineer and high-speed CW operator who designed the circuitry. Ricks filed U.S. Patent 3,041,397, "Telegraphic Keyer," on April 22, 1960, and the patent was granted on June 26, 1962. The "T.O." designation was a nod to his call sign. He assigned the patent (pending) to Hallicrafters in late 1960.

HA-1 offered two selectable speed ranges: "Low: 10 to 30 WPM" and "High: 25 to 65 WPM." In practice, there are three overlapping zones indicated on the front panel: approximately 10–22 WPM, 20–45 WPM, and 45–60 WPM. The mark-to-space ratio remains consistent throughout these ranges, so the sending ratio would be the same no matter what speed was used all the way to 65.

At the core of the HA-1's keying circuit was a C.P. Clare mercury-wetted contact relay rated for 5 amperes or 500 volts, with the caveat that the product of current and voltage not exceed 250 VA. This allowed the HA-1 to key transmitters with plate-keying voltages up to 500 V DC, provided the current stayed within safe limits and a proper contact-protection network was employed. Because of the liquid mercury contact design, Hallicrafters cautioned operators to keep the unit within 30 degrees of level; otherwise, the mercury could shift away from the contacts. The relay in the HA-1 is virtually silent and able to key all the way to the 65 WPM speed without any mechanical "clipping". Just a side note: the relay was the most expen-

W70S DOC SPIKE MUSEUM

Featured Gear from the Museum

Photos & Text by Dave W7UUU

sive part in the whole unit and is very hard to find today.

The sidetone circuit, while effective, isn't the most pleasant to listen to. It uses a very basic neon bulb-based relaxation oscillator that's a tad on the raspy side—at least to my ears. It's the same type of circuit used in the Heathkit HW-16 Novice transceiver, and a multitude of inexpensive code oscillators of the era. The sidetone level is adjustable and can be directed either to the internal speaker, headphones, or via the 8-pin octal socket on the rear, could feed directly to your station speaker. Or if you want, just disconnect it or turn it down altogether and monitor your sending on your receiver (which is always my preference).

Rear view—you can see the relay between the two regulator tubes. The volume, weight, and balance controls are all "set and forget" on the rear panel.

Ricks' logic design used four 12AU7 dual-triode tubes arranged as flip-flop multivibrators for dot and dash generation. One tube pair acted as a free-running multivibrator governing dot timing, while the other operated as a triggered bistable (a "scale-of-two") circuit that divided and synchronized the output.

When the operator pressed the dit paddle, one side of the circuit oscillated in precisely timed bursts; pressing the dah paddle produced a proportionally longer signal. Both controlled the relay driver that keyed the transmitter with perfect timing accuracy. I have no doubt that Jim Ricks took his idea right out of the literature of the day from the nascent "tube-based computer industry".

Despite its technical sophistication, the HA-1 was still a product of its era and lacked modern niceties. The biggest of these being there is no "dot and dash memory". The instruction manual cautioned that "rapid, effortless operation of the keyer requires a certain knack that comes only with practice."

Attempting to send a dot before a dash had fully completed will result in the dot being ignored—the internal timing circuits were still finishing the dah and not yet ready to accept a new input. Beginning in the late 1960s, this was solved by adding a basic memory circuit that would hold the dot trigger long enough for the dash to complete. It takes some getting used to. I find it best to develop something of a "slap motion" on the paddles that, at least for my hand, makes it easier to time the release of the dah paddle before hitting a following dit. If you don't do this, it's very easy to drop the dits in the middle of letters like Y, C, K, etc.

The HA-1 power supply is fully regulated (OA2 and OB2 gas regulator tubes, visible in the photo at the left) and used silicon rectifiers instead of selenium which were very common then, and its construction provided excellent RF immunity. The chassis was built to transmitter standards, with a real power transformer and substantial mechanical strength—áttributes consistent with Hallicrafters' slogan at the time, "the equipment of the experts."

The HA-1 "T.O." Keyer holds a distinctive place in the evolution of Morse keyers. It bridged the tech gap between mechanical speed keys (bugs), analog RC-based keyers, and the first transistorized electronic models, introducing digital timing logic to amateur radio years before integrated circuits became commonplace. It's really iconic looks are one of the reasons the T.O. keyer has maintained a following over many years.

You can find the full manual with schematic at THIS LINK if you want to read more about the HA-1 T.O. Keyer.

-Dave W7UUU

ANTENNA TIME

Are End-Fed Antennas Miracle Antennas?

By HF Kits

ARE ENDFED ANTENNAS

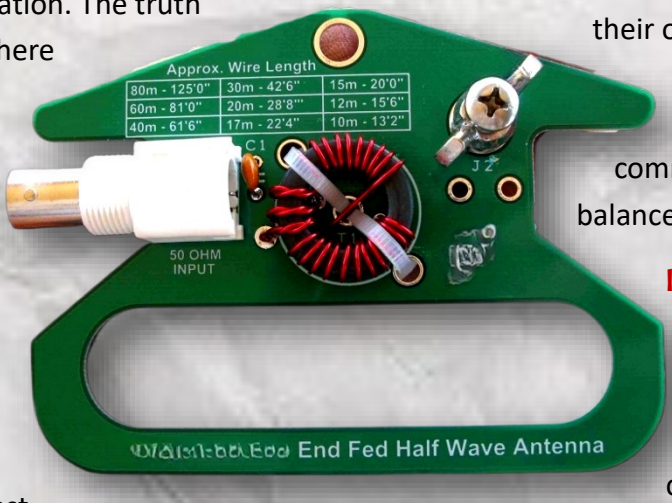
really miracle antennas?

By HF Kits

Anyone browsing the internet for experiences about end-fed antennas will come across a lot of information. Besides stories about fantastic DX connections and great reception reports, you can also find a lot of negative information. The truth will undoubtedly be somewhere in the middle, and this article will elaborate on this in detail.

Benefits of an end-fed

An advantage of end-fed antennas is of course their simplicity, especially for fieldwork this is a huge advantage. Put a telescopic mast against a pole, hook the antenna to the top and slide it out. You are on air within 5 minutes! An additional advantage is that the antenna can easily be polarized vertically. This makes the antenna convenient for (DX) long distance connections. Totally fantastic is the fact that the antenna is resonant at half a wavelength or a multiple of this wavelength. This makes the end-fed antenna perfect as a multiband antenna. Just look at the following example: 20-meter wire is a half wavelength for the 40 meter band, two half wavelengths for the 20 meter band, four half wavelengths for the 10 meter band and 3 half wavelengths for the 15 meter band. Couldn't be better, you say!?



Disadvantages of an end-fed

So far only benefits, what's wrong with such an antenna? Unfortunately, there are very many cases known of people who suffer from a variety of interference when using end-fed antennas. Think EMI, restless reception, RF in the shack or all kinds of devices in the house that will lead a life of their own as soon as you get on air. There is only one clear reason for this and that is common mode current or imbalance in the supply line.

Imbalance… how?

In principle it does not matter whether you are working with open line, chicken ladder or coax cable, there is almost always an imbalance in the feed line with end-fed antennas. As a result, the feed line becomes an unintentional part of the antenna system, resulting in all the aforementioned problems. In the case of an end-fed antenna fed with open-line, only one wire at the end of the feed line is connected to the half wave antenna. The other wire of the transmission line therefore is unconnected. It may be clear that at the end of the loose wire no current runs. Where should that current run? At the end of the other wire, current still runs

ANTENNA TIME

Are End-Fed Antennas Miracle Antennas?

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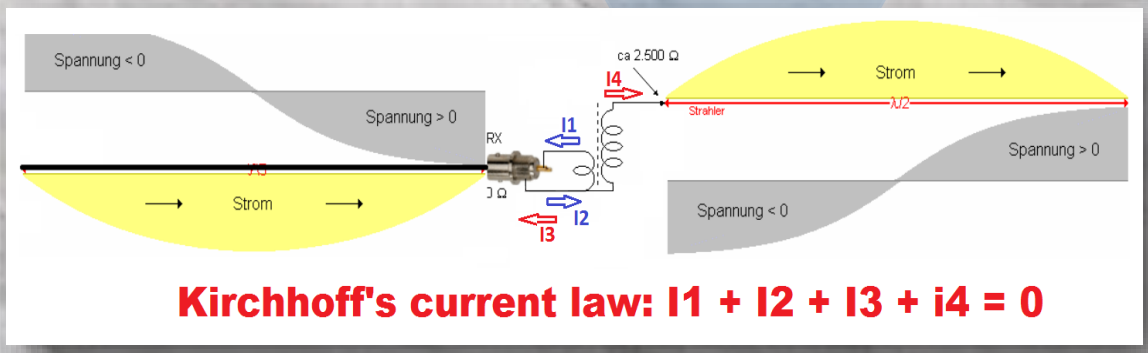
into the antenna, otherwise the radiator wouldn't do anything.

So at this point there is imbalance in the feed line. Now I can hear you thinking…. There is a voltage maximum at the end of the feedline and there is almost no current flow at this point, so does this matter? The minimum current difference at this position of the feedline does not do much but is sufficient to create a significant difference in current a quarter of a wavelength further down the feedline. This imbalance in the feedline causes it to become part of the antenna, resulting in all the problems mentioned above.

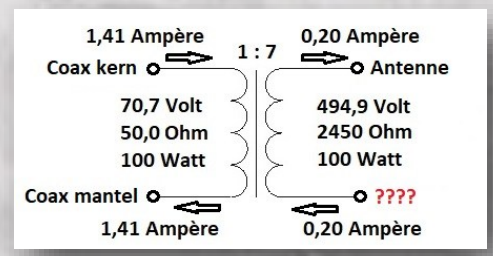
But my end fed antenna is fed by coaxial cable?

End-fed antennas with an impedance transformer fed by coaxial cable probably don't suffer from this? Unfortunately, this makes no difference. In this case, the outside of the coaxial cable is used as an antenna. See image below.



Common mode current in coaxial cable at end fed antenna (Source: Wolfgang Wippermann DG0SA)

To clarify this, a schematic representation of the impedance transformer has been drawn below. The (left) primary side is fed with coaxial cable. The voltages and currents are shown at 100-Watt power. On the primary side you can see that 1.41 Amps goes into the transformer. With a winding ratio of 1:7 this results in an output current of 200 milliamps at the secondary (right) side of the transformer. Now the top side of the secondary side is connected to the antenna, so 200 milliamps will run here. At the bottom of the secondary side of the transformer a proportional amount of current will flow. With the "end fed" antenna, this is coupled to the coax shield (bottom primary windings). In practice this current will run over the outside of the coaxial cable.



It may be hard for some (including me) to imagine a coaxial cable can be seen as a cable with three conductors. The center core, the inside of the shield and thirdly the outside of the shield.

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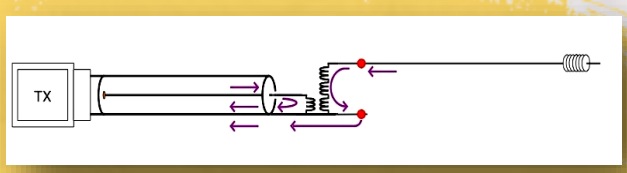
If there is no common mode current, the currents in the center core and the (inner) shield are equal. If common mode current does flow, it will look like this:



Because the currents are not in balance, the coax cable will also radiate in this case. Unfortunately, this also applies to reception. So, the antenna has an increased chance of picking up all kinds of interference in the near vicinity of the coax cable.

Practical examples

When I switched from a dipole antenna to an End-Fed antenna my interference problems started. I heard my own voice through the PC speakers. The dipole probably had a 1:1 Balun which prevented common mode currents. The EndFed antenna does not have common mode current prevention, this causes RF in the shack through the outside of the coax cable.

After installing a common mode choke, the reception with my EndFed antenna was a lot quieter. It saves 3 S points! This can also be explained by the fact that the coax cable is part of the antenna. The feedline radiates when transmitting, but in case of imbalance it also works as a receiving antenna. All kinds of interfering signals in the house now radiate directly into the coax cable. Think also of the mains installation from which a lot of noise (Power Line Communication) comes nowadays.

The length of my coaxial cable affects the SWR. Because the coaxial cable serves as a counterpoise capacity, this is indeed the case.

Common mode choke

If you suffer from problems then use a good common mode choke. Do not place the choke directly near the antenna feed point because the filter will hardly work. Most filters promise fantastic attenuation but measured at an impedance of 50 Ohm. Since the impedance is very high near the supply point, the filter will hardly work. Ideally, the filter should be placed a quarter of a wavelength from the feed point. At this point, the impedance is low again, which will make the filter work optimally. With multiband antennas this point is of course different for each band. In this case, use an average. For example, 6.5 meters from the feed point at a 10, 20, 40 EndFed Antenna. The second choice would be 3.8 meters away from the feed point is also a good option.

Counterpoise

At EndFed antennas a certain current flows into the antenna, but according to “Kirchhoff’s current law” a proportional amount of current must flow somewhere else. Without a counterpoise this will be the

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Are End-Fed Antennas Miracle Antennas?

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outside of the coax cable. A good way to minimize this is to create a counter-capacity. (Counterpoise) In the case of the End Fed antenna, you can simply make an extra connection and connect it to the co-axial cable shield. The counterpoise can be anything, think of: a piece of wire, the zinc gutter, the antenna mast or a ground pin. I prefer the combination of a common mode choke and counterpoise because this way you force the antenna matching box to use the counter-capacitance instead of the coax cable.

So…. What have we learned?

Is the end fed antenna worthless or not? I absolutely don't think the end fed antenna is worthless, otherwise I wouldn't have offered it as a self-built kit in the shop. From a technical point of view, there is a lot to be noticed on the antenna as can be read above. Common mode current over the coax cable and therefore imbalance in the feed line are simply not desirable. On the other hand, it is an antenna that works great with a lot of people and can be used to make very nice DX. My personal advice is to use this antenna in the field without a common mode choke or other modifications unless there are problems. When working at home with end-fed antennas, I would certainly opt for a good common mode choke and counterpoise capacitance. If you have the space and possibilities for a symmetrical antenna, then this is my preference.

-*HFKits*

Edited for space considerations –editor

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COOL GEAR!

Interesting Bits of Gear Any Ham Can Use

By W7UUU

THIS MONTH'S COOL GEAR GIZMO ISN'T REALLY A piece of ham gear but it's something I really needed recently—a way to measure not only distance but calculate area and volume using laser measurements in a space that wasn't conducive to using manual measuring tools.

I found the Elitech LDM-50D on Amazon for under $24 which is about the least expensive such tool I could find. But I can honestly say it's pretty amazing in how well it works so I thought it would be a good gizmo to share in this column space.

The LDM-50D measures distances up to 165 feet with pretty remarkable precision, rated at about ±2 millimeters—accurate enough for just about anything you'd want to do around your house or shack.

And it works really well, projecting a sharp laser point that bounces back instantaneously to report exact measurements on a backlit LCD display that's easy to read even in dim conditions. I didn't have options to drag a tape measure in my barn where I needed to measure some spaces including way up high for a project so this was a great solution.

Elitech LDM-50D
Click image to view on Amazon

The LDM-50D can do a lot more than simple distance readings as well. It calculates area and volume automatically, which means that with just a few quick button presses, you can find out the square footage of a floor or the cubic capacity of a space—something that's incredibly handy for painting, flooring, or, in my case, storage planning. It also includes the Pythagoras function, a clever mode that lets you measure indirectly using the geometry of right triangles. For instance, you can find the height of a wall or building without physically reaching it—just measure along two sides, and the internal math handles the rest. I will readily grant I did NOT need to use this function but played with it and found it pretty amazing.

Needless to say, it toggles between feet, inches, and meters, so you can work in whatever system makes sense for you. I used feet and inches. It also keeps a memory of up to 99 measurements. The entire unit is compact, lightweight, and has a really robust feel to it—it's not "ticky tacky" plastic feeling at all. Like most things with complex functions, there is a bit of a learning curve if you want to do the fancy stuff with the complex math. But for 99% of what most of us would use it for, you just need a cursory review of the online instructions to work out all you'll need to know. I found it pretty simple to use. For $24, it's a great addition to my arsenal of shop tools.

-Dave W7UUU

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STRAY TOPICS OF INTEREST:

Top Ten & Hamfests

Dave W7UUU

10

10 Top Most Rare Receivers

This month's Top Ten list is the list of most rare ham commercially made ham radio receivers of all time. Some were rare because they just didn't find a following, others are rare because of their extremely high cost. But most often, they are rare due to a combination of these two factors. The list below ranks them from least rare (#10) to most—being the HRO-600 with only 200 units every made.

-Dave W7UUU

1	National HRO-600
2	Morrow MB-6
3	Mosley CM-1
4	Drake 1A
5	Hallicrafters SX-115
6	Drake MSR-2
7	National HRO-50
8	Hammarlund PRO-310
9	Hallicrafters SX-88
10	Davco DR-30

Upcoming Ham Fests in the Area

Data published with permission from Lynn at N7CFO.com

Sorry folks—I have no December Hamfests to report.

Radio Club of Tacoma Ham Fair 1970

HAM TECH 101

By Larry, W2LJ

Useful tech info for newer hams and old

The DX Code of Conduct

WHAT IS THE DX CODE OF CONDUCT?

By Larry, W2LJ [Source]

This article will deal with a phenomena that is occurring more and more frequently, I believe. But it hasn't been noticed by me alone, it was also noticed by Jim K9JV, who posted about it on QRP-L this morning. I touched upon this in my recent post about pile up behavior; however, this is a very important topic, so here we go again.

Jim was trying to work both P29NO and 9M4SLL. The pileups were big and unruly. While it is the domain of the DX to try and control the pileups, it remains the responsibility of those trying to work the DX to do so in as "professional" a manner as possible. Jim pointed out that several stations continued to throw out their calls, even though the quarry was clearly calling for a station whose call was in no way similar to those of the perpetrators.

This is maddening! K9JV was furious (and justifiably so) that when P29NO was calling "K9?V", a KØ, a VE and a W2 kept plaguing the ether with their calls. I had a similar experience a few years ago when I was trying to work an Iraqi station. I was one of those competing in the pileup, and the Iraqi station suddenly began sending "W2L?" He meant yours truly of course, yet I was obliterated by a W4 station, and no, it wasn't a W4Lsomething (I could have accepted that) – the station didn't even have an "L" in their call at all! Jim was lucky as he ended up working P29NO. In my case, the Iraqi station subsequently went QRT and I never got him in the log.

What causes this kind of behavior? **Are people truly that stupid and discourteous?** I don't know the answer to that, although I am tempted to offer an unfounded and uncharitable guess.

But I think part of the problem may lay in the way that I think DX is encountered today. At the risk of sounding like a curmudgeon, in the days of old, we used to find DX by twiddling the dial and listening for it. You spun the dial knob, up and down – back and forth, straining your ears to find that foreign amateur radio op. If you were lucky, you were able to hear him, you worked him and you were good to go. Or you listened for a pileup, and you located the station they were all calling, determined if you needed him, and then you joined the fray. But in essence, YOU had to locate the DX station yourself, either by dial twiddling or by locating the goal of a pileup.

Today, things have gotten immensely easier; but at the same time, we have invoked "The Law of Unintended Consequences". Allow me to explain with this scenario:

A station twiddles the dial – he finds and hears (for example, we'll use a DXpedition that just concluded) TX5K. He works him. Then, proud of his accomplishment, he posts TX5K to any of the various Internet "spotting networks" (in the days of old, the Packet Cluster), wishing to share the bounty. Immediately, on the screens of Amateur Ops the world over, it appears that TX5K has appeared on 18.073 MHz (for example).

Nowadays, with the myriad of the logging programs and rig control programs available, an Amateur Op can just point and click with his mouse and "Viola!" there they are, on TX5K's frequency.

I think the problem is, that many (but by nowhere near all) ops don't pause to listen to hear if they can actually hear the DX station. Or may be they can, but they hear him only marginally *at best*.

In fact, they hear him so *marginally* that if they were tuning across the band on their own, they wouldn't have been able to tell that it was the DX in the first place – but hey, their computers tell them that he's there, right? So what do they do?

They start throwing out their calls in the hopes that somehow he'll magically get louder and that they'll be heard in return. Heck, in many cases they can't even tell that he's work-

HAM TECH 101

By Larry, W2LJ

Useful tech info for newer hams and old

The DX Code of Conduct

ing split! So they call *right on the DX frequency*, which then invokes the ensuing cacophony of "UP"s and "LID"s being sent. The UP police are often the biggest offenders on the band!

It gets to be one, big frustrating mess. And this doesn't even take into account the zoo that can occur if some quack, who literally enjoys jamming DX operations, gets involved, and starts spewing obscenities (even in CW!!) on the DX frequency in his roll as "UP Police"

So what should be done about this? Closely and completely adhere to the "**DX Code of Conduct**" – that's what! The DX Code of Conduct was formulated many years ago by Randy Johnson W6SJ.

1. **I will listen, and listen, and then listen again before calling.**
2. **I will only call, if I can copy the DX station properly.**
3. **I will not trust the DX cluster and will be sure of the DX station's call sign before calling.**
4. **I will not interfere with the DX station nor anyone calling and will never tune up on the DX frequency or in the QSX slot.**
5. **I will wait for the DX station to end a contact before I call.**
6. **I will always send my full call sign.**
7. **I will call and then listen for a reasonable interval. I will not call continuously.**
8. **I will not transmit when the DX operator calls another call sign, not mine.**
9. **I will not transmit when the DX operator queries a call sign not like mine.**
10. **I will not transmit when the DX station requests geographic areas other than mine.**
11. **When the DX operator calls me, I will not repeat my call sign unless I think he has copied it incorrectly.**
12. **I will be thankful if and when I do make a contact.**
13. **I will respect my fellow hams and conduct myself so as to earn their respect.**

WHAT ARE THE MOST COMMON Q-CODES?

QRL	Is the frequency busy? The frequency is busy. Please do not interfere.
QRM	Abbreviation for interference from other signals.
QRN	Abbreviation for interference from natural or human-made static.
QRO	Shall I increase power? Increase power.
QRP	Shall I decrease power? Decrease power.
QRQ	Shall I send faster? Send faster (__words per minute [wpm]).
QRS	Shall I send more slowly? Send more slowly (__wpm).
QRT	Shall I stop sending or transmitting? Stop sending or transmitting.
QRU	Have you anything more for me? I have nothing more for you.
QRV	Are you ready? I am ready.
QRX	Stand by.
QRZ	Who is calling me?
QSB	Abbreviation for signal fading.
QSL	Did you receive and understand? Received and understood.
QSO	Abbreviation for a contact.
QST	General call preceding a message addressed to all amateurs.
QSX	I am listening on ___ kHz.
QSY	Change to transmission on another frequency (or to ___ kHz).
QTH	What is your location? My location is ____.

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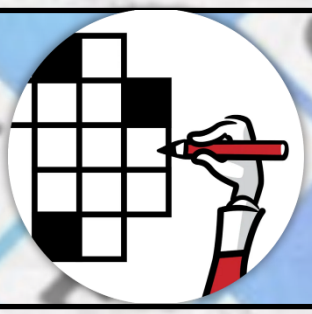
email loggersbark@gmail.com

FUN AND GAMES!

Crosswords, Word Search, etc.



"Antenna Word Search" Print this page to play!

M	R	E	A	C	T	A	N	C	E	V	O	Y	I	I	H	D
I	B	I	J	C	E	Y	V	H	N	P	T	G	O	S	O	I
I	D	I	P	O	L	E	L	C	B	V	A	F	I	T	G	R
A	A	A	Y	G	G	R	A	O	A	Y	I	D	M	W	N	E
M	O	Q	U	U	M	B	C	M	L	L	Q	S	P	D	I	C
C	L	A	D	D	E	R	E	X	U	S	C	T	E	O	D	T
Y	U	G	A	M	M	A	Y	V	N	Y	Q	B	D	H	N	O
B	S	S	U	R	Z	A	T	L	E	D	R	C	A	H	A	R
N	L	U	H	V	O	S	A	E	S	R	P	M	N	G	T	S
D	A	F	J	C	M	T	M	O	D	N	A	R	C	O	S	V
E	I	I	V	I	R	B	A	D	T	X	Z	G	E	I	D	S
T	D	Y	T	I	A	A	A	T	E	A	F	P	E	G	F	T
A	A	H	E	J	N	Z	F	H	O	Y	Z	B	A	A	Z	E
I	R	E	A	M	V	T	S	T	U	R	M	B	Z	U	K	P
D	R	B	F	I	O	N	O	S	P	H	E	R	E	Q	K	P
A	S	B	N	H	L	N	R	E	S	O	N	A	N	C	E	I
R	P	C	F	H	W	E	R	D	N	A	K	F	Z	A	T	R

Impedance	Reactance	Smith	ugly	ionosphere
Radiate	Random	Ladder	Balun	Hex
Quagi	Cushcraft	Andrew	Rotator	NVIS
Radials	Beverage	Delta	Dish	Resonance
VNA	Standing	EFHW	Dipole	SteppIR
Gamma	Director	Yagi		

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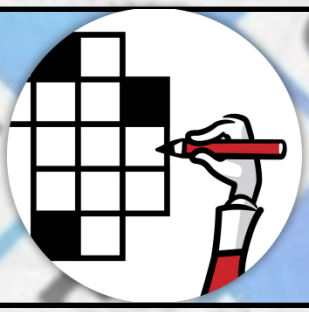
FUN AND GAMES!

Crosswords, Word Search, etc.



Answer Key… but don't cheat!

M	R	E	A	C	T	A	N	C	E	V	O	Y	I	I	H	D
I	B	I	J	C	E	Y	V	H	N	P	T	G	O	S	O	I
I	D	I	P	O	L	E	L	C	B	V	A	F	I	T	G	R
A	A	A	Y	G	G	R	A	O	A	Y	I	D	M	W	N	E
M	O	Q	U	U	M	B	C	M	L	L	Q	S	P	D	I	C
C	L	A	D	D	E	R	E	X	U	S	C	T	E	O	D	T
Y	U	G	A	M	M	A	Y	V	N	Y	Q	B	D	H	N	O
B	S	S	U	R	Z	A	T	L	E	D	R	C	A	H	A	R
N	L	U	H	V	O	S	A	E	S	R	P	M	N	G	T	S
D	A	F	J	C	M	T	M	O	D	N	A	R	C	O	S	V
E	I	I	V	I	R	B	A	D	T	X	Z	G	E	I	D	S
T	D	Y	T	I	A	A	A	T	E	A	F	P	E	G	F	T
A	A	H	E	J	N	Z	F	H	O	Y	Z	B	A	A	Z	E
I	R	E	A	M	V	T	S	T	U	R	M	B	Z	U	K	P
D	R	B	F	I	O	N	O	S	P	H	E	R	E	Q	K	P
A	S	B	N	H	L	N	R	E	S	O	N	A	N	C	E	I
R	P	C	F	H	W	E	R	D	N	A	K	F	Z	A	T	R

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About this Publication

The Logger's Bark is the official publication of the Radio Club of Tacoma and is published by RCT, PO Box 11188, Tacoma, WA 98411. The Radio Club of Tacoma is a non-profit corporation as defined by law. All proceeds will be used exclusively for charitable and educational purposes. The Radio Club of Tacoma's Club House is located at 1249 Washington St, Tacoma, WA 98405, phone: 253-759-2040.

Emailing Officers

To contact any club officer, simply send an email to their call sign @W7DK.org

Contributions of Articles & photos

We WELCOME contributions of articles, guest editorials, blurbs, Hints-and-Kinks, shack photos, QSL cards, memorable contacts, anything of interest to your fellow members. Submit your materials via email to: loggersbark@gmail.com or via US mail to PO Box 11188, Tacoma, WA 98411 Nichrome

Radio Club of Tacoma Repeaters

Central Tacoma 2m:	**147.28 + PL Tone 103.5**
Central Tacoma 70cm:	**440.625 + PL Tone 103.5**
Crawford Mountain:	**147.380 + PL Tone 103.5**
North Tacoma:	**145.21 - PL Tone 141.3**

The Loggers Bark ***does not*** accept AI / ChatGPT submissions

Membership Information

- Full-time students, licensed or non licensed, up to age 25 are $20 per year.
- Fees are applicable for the calendar year: January to December
- Lifetime membership is 20 times the yearly fee you are eligible for. Lifetime memberships are calculated based on the FULL and ASSOCIATE rates.
- Visit www.w7dk.org For the latest and most current information on events and activities

MEMBERSHIP APPLICATION

CLICK HERE!

Have a submission for our next issue?

loggersbark@W7DK.org

BOARD OF DIRECTORS

Board-approved minutes from the most recent meeting

W7DK

Radio Club of Tacoma
Board of Directors Meeting
October 1, 2025

Meeting called to order at 19:00 by President Adam W2NCC

Officers and Directors Present

_X_	President	Adam Barbera W2NCC
_X__	Vice President	Mike Isakson W7XH
_X__	Secretary (temp)	Mike Drorbaugh W7MKE
_X_	Treasurer	Doug Schafer AB7DG
_X__	Board	Jeff Winget W8NGS
___	Board	Paul Matney W7PFU
_X__	Board	Dave Ashley W7GEL
_X__	Board	Dan Vacanti KD7SV
_X_	Board	Mike Drorbaugh W7MKE

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Quorum? Yes.

Silent Key or Illness?

Mike W7MKE talked to Bruce WE7P today. He broke both legs and both the tibia and fibula in each! He is recovering but has a way to go. He is still at the assisted living home Eliseo Skilled Nursing Facility, Room 710 1301 N Highlands Pkwy Tacoma. He will go to an extended care facility in Gig Harbor in a week or 10 days. He is in good spirits.

Approval of Minutes of September RCT BOD Meeting: Moved to accept by Mike W7XH seconded by Jeff W8NGS. **Motion carried.**

Secretary's Report (Mike W7MKE)

No unusual correspondence. I will be reviewing the minutes of 2025 to see if there are policies that should be updated in our Standing Rules. This is a routine that should be done each year.

Treasurer's Report (Doug AB7DG)

No report because of timing of this meeting. Secretary will include it in the minutes when distributed prior to November BOD meeting. Doug noted several Salmon Run donations have come in.

Committee / Reports

Membership & Planning (Mike W7XH)

Mike W7XH said that Planning Committee will meet after Bigfoot.

BOARD OF DIRECTORS

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W7DK

Membership is 433. Membership renewals are ready to go out as soon as nominations are completed after this month's meeting.
Salmon Run is about $6000 to date. There are pledges that were dependent on our contest performance that need to be billed and amount to about $600. We will fall short of last year's $11,000 total.
In standing Rules, the VP is responsible for the SK board. Mike will run a query after Bigfoot to update the board. He thinks there are about 10 names missing.

Library (Doug AD7AV)

Randy WB4SPB reported that the Library Committee did meet recently but it is in maintenance mode for now and probably will not be accepting new volumes unless they are special. They will streamline the check-out/check-in process. Gary WG7X and Becky KG7FZH Friedman have joined the library committee.

Training/ VE (Stephen AD7AB)

Stephen's next class is October 11-12 and VE session on the following Tuesday, October 13th. A General Class is ongoing. Due to the government shutdown no new licenses are being issued.

Info Tech and Website (Randy WB4SPB)

All systems nominal.

HF Operations (Phil K7PIA)

Phil reports that the stations are in good operating condition. An Icom 7300 was added to the EmComm station for HF. Upcoming contests mentioned are CQ Worldwide DX phone. CW Sweeps is first week of November and two weeks after that is phone sweeps.

New members to HF committee are Jeff Winget W8NGS and Dave Stilwell AC7KP.

Repeater Ops (Alan N7OMS)

Nothing offered

Facilities Mgmt (Adam W2NCC)

Adam reports he had lots of issues in September, so he did not get to much. He has all the necessary equipment to update the 40M dipole and the cable ladder. He is planning this work and additional projects, such as extensive power washing, and aims to accomplish more tasks in October.

Property Mgmt (Red WB7EC)

SEE ATTACHED PMT REQUEST

Red reports that September income was $980.00. Jeff W8NGS moved to dispose of the items on the PMT list. Mike W7MKE seconded. W7XH asked if Committee chairs had seen the list in case they needed something. Red reports that they all received a copy. **Motion Carried.**

BOARD OF DIRECTORS

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W7DK

We received more donations last Saturday. Several items attract buyers' interest. Randy WB4SPB will pick up stuff from Verna Lilly who is donating her HF gear to the club. Randy will bring it to the club.

Museum (Dan KD7SV)

Dan reports slow progress on SX101 and hopes to come in on Saturday and get something done. Randy reports that the Classic Exchange is upcoming at the end of the month and one bonus category is Globe Transmitter, which W7OS has one and Randy is getting it off the shelf and ready to use.

Weds Workshop (Paul N7OSS)

Paul reports that in October we will have an antenna analyzer shoot out. W7MKE will lead and said we would check calibration and learn how to check coax for shorts. In November Mike W7XH will do an antenna build: an end fed with balun.

General Meeting (Dave W7UUU)

Dave reports that the meeting next weekend is BJ KO7T presenting All about POTA.

Unfinished Business

- Update on Endowment plans (Adam W2NCC/Doug AB7DG)

Adam wrote about the endowment in August with a September update and told of another club member who wants to fund the endowment now rather than make the donation in his will. There are four members he knows of who have indicted wanting to fund the endowment.

Doug AB7DG said he is waiting for response from ARRL to start our endowment through them. ARRL Division Director Mark Tharp indicated that this may take a few months to get the approval and be set up, so we are in a waiting mode for now.

Randy WB4SPB asked what the difference is between the expenses of Greater Tacoma Community Fund and the ARRL fund? Returns depend on how funds are invested each year, and how they do. Tacoma seems to generally return 4.5% . They use 1% to give to the community instead of returning 5.5% to fund participants. With ARRL we do not anticipate the extra 1% fee that GTCF charges.

New Business

Nothing offered

Activity Reports, Discussion Topics, Announcements

- Committee Chairs should submit Budgets for 2026 by November BOD meeting.

- Elma Scouts request participation at their JOTA October 17 – 18, during our BF. JOTA JOTI in the past this link is a video put out by K2BSA (the Scouting America Radio group) that breaks down the

BOARD OF DIRECTORS

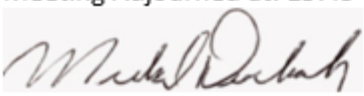
Board-approved minutes from the most recent meeting

W7DK

event. https://youtu.be/WOGIGho_Bhk?si=l0MUy6B2US8e41hN and here is the official JOTA/JOTI Webpage JOTA-JOTI 2025 | A World Shaped by Youth .
Red WB4SPB and Phil KC7PS will attend and help with JOTA. Phil asked for one more volunteer.

- Doug AB7DG sent out information to the BOD about the PayPal portal for donating to an endowment or nonprofit (of which RCT is a nonprofit) there is no fee for that kind of donation.

Meeting Adjourned at: 19:49



Mike Drorbaugh W7MKE
Secretary Pro Tempore

Attachments: Attendance List
PMT List
Treasurer's report

++

	NAME	CALLSIGN	RCT NUM
	ATTENDED at Clubhouse		
1	DAVE STILWELL	AC7KP	2073
2	PAUL NOSAL	K7OSS	2530
3	PHIL SHIDELER	KC7PS	2853
	ATTENDED VA ZOOM		
4	RED CRANEFIELD	WB4EC	2561
5	GARY McADAMS	WG7X	1249
6	JOHN BUONORA	KJ7SJM	2954
7	PHIL PIA	K7PIA	
8	DAVE ELLISON	W7UUU	743
THIS LIST DOES NOT INCLUDE OFFICERS AND DIRECTORS LISTED AT THE BEGINNING OF THE MINUTES.			

BOARD OF DIRECTORS

Board-approved minutes from the most recent meeting

W7DK

PMT OCTOBER 2025

Property Management team request permission from Board of Directors of the Radio Club of Tacoma to dispose/recycle the following excess items.

1. RCT 4416	Kenwood HF XCVR TS-590GS	SN: 86610042
2. RCT 4417	Kenwood Speaker SP-520	SN: NA
3. RCT 4418	Kenwood VHF XCVRTS-711A	SN: 9100005
4. RCT 4419	Kenwood SWR & PWR Meter SW-2100	SN:898
5. RCT 4420	Kenwood LED Digital Display DG-5	SN: 710292
6. RCT 4421	Kenwood 22 Amp Power Supply PS-60	SN: NA
7. RCT 4422	Kenwood Remote VFO 520S	SN: 810100
8. RCT 4423	Kenwood HF XCVR TS-520S	SN: 811283
9. RCT 4424	MFJ Roller Antenna Tuner MFJ-898C	SN: NA
10. RCT 4425	Kenwood Speaker SP-230	SN:
11. RCT 4426	MFJ 30AMP Power Supply MFJ-4230	SN: NA
12. RCT 4427	Kenwood Desk Mic MC-50	SN: NA
13. RCT 4428	Kenwood Desk Mic MC-60A	SN:NA
14. RCT 4429	Icom All mode UHF XCVR IC-471A	SN:1328
15. RCT 4430	Icom All mode VHF XCVR IC-271A	SN:1194
16. RCT 4431	Astron 35 AMP Power Supply RS-35M	SN: 9411188
17. RCT 4432	ICOM HF XCVR IC -751	SN: 01525
18. RCT 4433	ICOM HF XCVR IC -751	SN: 07024
19. RCT 4434	Ailnco Multi-mode RX DJX11T Handheld	SN:
20. RCT 4435	Yaesu HF XCVR FT-101E	SN: 6c 121485
21. RCT 4436	Wouxun VHF/UHF KG-UV9D Handheld	SN:
22. RCT 4437	Alinco VHF/UHF XCVR DJ-VX5	SN:
23. RCT 4438	Uniden Scanner Trunktracker IV	SN: 38002031
24. RCT 4439	AOR Scanner AR8000	SN: 24996

BOARD OF DIRECTORS

Board-approved minutes from the most recent meeting

W7DK

25 RCT 4440 Yaesu VHF XCVR VX5	SN:
26. RCT 4441 MFJ RF Sensor SDR RX/TX Switch MFJ-1708B	SN: NA
27. RCT 4442 Heathkit Station Scope HO-5404	SN: NA
28. RCT 4443 Kenwood VHF XCVR TM-231A	SN: 10200619
29. RCT 4444 Kenwood Desk Microphone MC-85	
30. RCT 4445 Astatic Desk Microphone D-104	
31. RCT 4446 Elecraft HF XCVR K 4/ Speakers	SN: 1214
32. RCT 4447 Elecraft HF QRP XCVR K 1	SN: 3342
33. RCT 4448 Heathkit HF Amp SB-200	SN: NA
34. RCT 4449 ICOM HF XCVR IC -751	SN: 3521
35. RCT 4450 Vibroplex Paddle-Black base	SN: 113576
36. RCT 4451 Vibroplex Bug- left hand paddle	SN: 196422

GENERAL MEETING

Board-approved minutes from the December 2024 meeting

W7DK

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Radio Club of Tacoma
General Meeting Minutes
October 11, 2025

Officers and Directors Present

__X___	President	Adam Barbera W2NCC
__X___	Vice President	Mike Isakson W7XH
__X___	Secretary (Pro Teme)	Mike Drorbaugh W7MKE
_____	Treasurer	Doug Schafer AB7DG
_____	Board	David Ashley W7GEL
__X___	Board	Paul Matney K7PFU
__X___	Board	Dan Vacanti KD7SV
___X__	Board	Mike Drorbaugh W7MKE
___X__	Board	Jeff Winget W8NGS

Meeting Called to Order at 13:00 by President Adam W2NCC

Flag Salute Led by Dave Hasen KK7NYW

Quorum? (10% of membership required to "conduct business")

Welcome and Acknowledgement of New Members and Visitors (Please introduce yourselves)
Alan KM7CIJ worked on IT security for 20 years. Now first meeting with RCT.
Sean W7ETT a member for 20 years but his first general meeting

Health and Welfare/Silent Key & Illness

Bruce WE7P is still recovering from broken legs.

PROGRAM:

BJ KO7T is here to tell us all about POTA.

- He's been licensed for 9 years now. Got it for backup because he's a deep-water sailor.
- Done lots of POTA from islands in Pacific.
- On W7DK website are instructions on how to get account and get setup. Plans are for W7DK to do 2 activations per month.
- What do you need.

GENERAL MEETING

Board-approved minutes from the December 2024 meeting

W7DK

Radio Club of Tacoma
General Meeting Minutes
October 11, 2025

- A radio! Whatever you have that can go portable
- Antenna, whatever will work and you have. Some parks don't like wires in trees. Both vertical and wires are popular
- Need a power source. Most use 12V battery. LiPo batteries are popular. Some hams use solar panels, lead acid or even generators.
  - BJ likes Dakota Lithium batteries because they are in a hard case.
- Log file, N3FJP, Hammers, etc. Lots are free so whatever you have including pen and paper. But to get credit you must be able to upload to POTA.

- Need to choose where to go. Lots of Parks here in WA, even more in BC. Find your POTA park number and you can spot yourself on POTA website. Spot yourself and people will come to you, often in droves.
- Activate: 10 or more contacts are needed to activate a park, upload them to POTA to get credit. Many awards are available.
- Only activators submit logs, the hunters do not. But everyone should submit a log when you "activate" a park even if you don't have 10 contacts because you still get credit, just not credit as a park activator. If you are doing parks close together, each park must be submitted individually logged and submitted.
- Why do POTA? Portable operations, low noise, nice parks, challenge of setting up portable, personal goals like awards. POTA awards are free.
- W7DK has activated a Park almost every month. Tomorrow's activation will be at Millersylvania.
  - Usually WRDK activations have 3 – 4 stations set up so come out and see what other people use. Different modes, antennas are in use. Or just socialize.
- Discovery: See the different parks, different countries, different history.
- Travel: if you like to travel then POTA works great with travel.
- In Parks, respect the park, respect the Ranger because he's in charge, keep your area clean.

QUESTIONS

How to keep batteries charged?

BJ uses 2- 12Amh LiPo batteries which works fine for a day use.

LiPo needs a special charger.

GENERAL MEETING

Board-approved minutes from the December 2024 meeting

W7DK

Radio Club of Tacoma
General Meeting Minutes
October 11, 2025

How do you activate a Park?

You must be inside the park and only Tier one and Tier two parks qualify, which means State Park, National Park, National Forest, etc. Not city parks, not county parks. Some wildlife parks are not available.

Are there any restrictions?

Typically not, except for maybe trees. Some parks have other restrictions. The Rangers all know about POTA and are usually inviting. Mike W7XH at a dessert wildlife reserve was working late in the day and was in the parking lot working about 45-minutes and the ranger seemed upset about his setup because he was afraid his radio emissions might upset the toad mating cycle. So, consult the ranger if you have questions or just to be polite. Wildlife areas are more likely to have restrictions.

Have you run into any height restrictions?

Not usually, BJ has never encountered that. Again, I suggest you consult the rangers for specifics. Try to set up safely: radials, wires, etc.

When you move out of state, do you change anything in your log?

Yes, update grid square and update the state in the logging software If you're in a new country, other rules may apply. LOTW, has specific rules about callsigns in locations not your zone.

Can you activate both IOTA and POTA?

Yes, if in a park on an island, IOTA and POTA are sperate programs so logs to POTA are a different submission from logs to IOTA.

Secretary's Report (Mike W7MKE)

Nothing of note, typical Secretary stuff to do. Correspondence is normal with Salmon Run donations still trickling in, occasional QSL cards and magazines.

Treasurer's Report (Doug AB7DG)

Nothing to report.

Committee / Activity Reports

Membership/Planning (Mike W7XH)

Training / VE (Stephen AD7AB)

GENERAL MEETING

Board-approved minutes from the December 2024 meeting

W7DK

Radio Club of Tacoma
General Meeting Minutes
October 11, 2025

Stephen AD7AB is doing a tech class today and Dave N7HT is doing a general class.

BIGFOOT SES:

BJ announced that BF would kick off 10/14 and run to 10/22. Contact BJ right away if you want to operate. We have seven teams this year.

HF Committee

Gary announced CQ Worldwide will be worked at W7DK October 25 – 26th. Interested parties should contact Gary WG7X.

Museum / W7OS Events (Dan KD7SV)

Classic Exchange through 10/27 and www.Classicexchange.org

Unfinished Business

- Adam W2NCC/Doug AB7DG update membership on status of endowment fund.
  - Doug reached out to ARRL to manage our endowment but it will be a few months before we hear from them about that.
- Adam W2NCC reminder/discussion of probably dues increase for 2027
  RCT BOD have discussed the need for dues increase

- review nominations for elections and final call for nominations
  - Randy reviewed procedures. He called for nominations.
    - Wade Marshall W7ITL nominated himself for BOD.
  - Ballots have pictures and a small statement. Randy needs your picture and a statement of 100 words or less of why you want to be elected. Additional statements can be put onto the website under the Governance tab there is a place for a candidate statement. You can send the statement to webhost@W7DK.org.
  - Ballots will be counted at the November Monthly Meeting and all ballots must be returned via mail or to the club secretary by noon on election day.

New Business

Announcements/show and tell/ traffic & Tuning

GENERAL MEETING

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- Committee chairs need to submit their budgets by next BOD meeting on November 5th.
- Committee chairs need to finalize RCT inventory under their care by November BOD Meeting.
- JOTA event in Elma, WA. October 17 – 18. See Phil KC7PS or Red WB4EC to help.
- Bigfoot Oct. 14 – 22st sign up ASAP if you want to help, cannot wait until last minute!
- December Awards Banquet and Monthly Meeting will be here at Eagles on Saturday December 13th.
- Dave W7UUU is stepping down as BARK editor so if you want to help with the BARK please notify Adam
- Also need a new program manager for 2026.

DOORPRIZE won by
Jiro, KW6A
Rick, W7RIK

Adjournment at 14:26

Michael Drorbaugh W7MKE
Secretary (Pro Tem)